PHILADELPHIA MEDICAL TIMES.

MONDAY, OCTOBER 2, 1871.

ORIGINAL LECTURES.

INTRODUCTORY LECTURE

TO THE COURSE ON PATHOLOGICAL ANATOMY AT THE UNIVERSITY OF PENNSYLVANIA.

Delivered September 4, 1871.

BY JOSEPH G. RICHARDSON, M.D.,

Lecturer on Morbid Anatomy in the University of Pennsylvania; Microscopist to the Pennsylvania Hospital, etc.

SINCE pathology is the science of disease, it follows that pathological anatomy must have for its object the investigation of those changes in the structure of organs which constitute disease, including, of course, congenital malformation; and the short series of lectures which I shall have the honor, gentlemen, of delivering before you, will therefore aim to direct your observation to this groundwork of the more prominent departures from health, to which our own bodies, in common with those of our patients, are liable. I well know that the details of this branch of medical science hold forth to students generally but little attraction; yet, if you will favor me with your attention for a short time, I think I can prove to you that no department of the healing art deserves more diligent investigation, because proficiency in none yields more promptly an abundant harvest of that grand prize for all our exertions, success in the practice of medicine.

Few rational beings will dispute that trite aphorism, "The proper study of mankind is man," and your very presence here to-day, as students of medicine, assures me that you need no arguments in favor of its corollary, that the best and wisest application of this study is towards the maintenance of health, the *mens sana in corpore sano*, that great element of all earthly happiness, without which the richest prince, the most powerful king, or even the wisest sage, is more miserable than its meanest possessor.

The pre-eminent value of the study of man as a means for obtaining that *sine quâ non* to every enjoyment, health of body and mind, being admitted, it is easy to see, further, that the most effectual mode of securing this blessing is by acquiring the widest possible knowledge of its derangements, as effected by the countless external agencies and forces of nature, and thus learning what noxious influences we need to avoid; because, as every one knows, ignorance of nature's laws no more absolves us from the penalty of their violation than will a similar want of knowledge be accepted by our legal tribunals as an excuse for infraction of their code. For example, the innocent child who eats a spoonful of arsenic, believing that it is sugar, and in ignorance of the divine ordinance which has decreed it to be fatal to our organisms, is as surely and (without assistance) as fatally poisoned, for that ignorance, as if he had committed the most monstrous sin; whilst, on the other hand, an adult who has swallowed the same drug by mistake, if he is well enough informed as to the laws of nature to promptly take an emetic, is saved by that very superiority of wisdom.

Since, then, ignorance concerning causes which produce the pathological changes of disease is continually punished, equally with the blackest of all crimes, by death, and, on the contrary, knowledge of those same causes is rewarded with the highest earthly prizes for resplendent virtue, life and health, it is manifest that our chief interest, our duty, and our privilege as physicians (in order to secure those blessings for our patients, many of whom are as ignorant of common injurious agents as a child can be of arsenic), is the comprehensive study of disease, with all its innumerable causes, phenomena, remedies, and effects.

Now, in the first place, you may perhaps be inclined to ask how observation of post-mortem changes (the inspection of dead flesh, as a sneering critic calls it) can be of use to you in your study of disease. But you need only remember that alterations of the various organs as seen after dissolution, such, for instance, as those in an ulcerated stomach or a cancerous liver, are necessarily consequent upon other changes, similar, except in being a little less marked, which existed towards the close of life; and you will recognize the fact that they gave rise then to symptoms resembling those which you are or will be daily called upon to relieve. Again, if we consider for a moment what part the knowledge of morbid anatomy, when so attained, has in our art of arts, that of healing, we must, I think, soon perceive that just as normal anatomy shows us the machinery of life and combines with physiology to teach us the healthy movements of that mechanism, so morbid anatomy links itself with pathology in unveiling to us the disturbance of organic action which we call disease.

Perhaps I can best elucidate my meaning, and most forcibly impress the idea upon your minds, by a mechanical illustration. Thus, for example, our own bodies, with all their ingenious contrivances and wonderful adaptation of parts to the various objects they are designed to fulfil, may be compared to some intricate machine, such as a steam-engine, which, when in complete running order, with every valve, lever, wheel, etc. acting in just mutual relationship, represents (except that it is far less complex) a healthy human organism. But let a screw work loose, so as to allow a little leakage at the steam-pipe, or the oil dry up, so as to prevent the free play of a valve, or an eccentric wheel slip a little on the shaft, so as to shorten the stroke of its rod, and we shall have resulting an imperfect action, manifested perhaps by an audible escape of steam, a slower rate of movement, or a loss of operative power,—in fact, the precise equivalent of that derangement of our system which from time immemorial has received the name of disease. If now we suppose a skilful workman called in to rectify the disordered engine, we may see him examine the movements of the machine whilst running fast or slowly, try with his wrench one and another screw-head, and listen here and there for the rush of steam, all these tests being applied to detect the exact seat and character of the little mechanical defect which interferes with the perfect action of the engine, and on which consequently the whole disorder depends.

Now, gentlemen, just as the machinist employs his trained senses to discover the *lesion of his engine* from its symptoms, which are the interferences it causes with the best action of the machine, so we, as rational physicians, should, when called to a case of sickness, devote our keenest perceptions, aided, if needful, by the microscope, the stethoscope, the thermometer, and other mechanical appliances, towards determining the primary *lesion*, the *pathological alteration of structure*, in our patient's body, by the symptoms, that is to say, the departures from typical health, which *its* interference causes in the functions of his organism.

Another inducement which I can earnestly offer you to pursue with vigor the study of pathological anatomy exists in the fact that by its aid you will often be enabled to gain the confidence of your patient and his friends; obviously a point of vital consequence, because it is manifest that, no matter how well you may understand the cure of disease, humanity is no better off if all sick men are afraid to intrust themselves to your care. As a rule, when, as recent graduates in medicine, you attempt to enter upon the practice of our art, you will frequently find your progress crippled, and

your usefulness obstructed, by a blind, unreasonable popular prejudice against "*young doctors;*" constantly you will discover, to your chagrin, that ignorant quacks and pretenders, *merely because they are older*, have their cures magnified, their shortcomings concealed, and their faults palliated or explained away, whilst you, solely for the atrocious crime of being young men, will not only be upbraided for that which it was beyond human power to avert in the management of a case, but, what is harder still, must submit to having stolen from you the credit which is rightfully your due.

The remedy for this glaring injustice, gentlemen, is best found in that accuracy of prognosis which is a direct result of an intimate knowledge of those pathological changes which occur, first, during the natural course of a disease, and, second, during its progress, as modified by therapeutic and other agencies. According to my experience, which I doubt not will be repeated in the future of every one of you, there is nothing that will do more to dissipate this unreasonable prejudice against youth, and win for you that confidence of patients, which means honor and fame, as well as fortune, than the ability to foretell correctly and accurately the course of disease,—the fact that your prophecy in regard to the time, manner, etc. of recovery or death is PROVED to be true by the result of the case in question.

Observe, if you please, that I do not here use the word prophecy in its Scriptural meaning of an inspired prediction, but in its mundane sense of a mere human calculation of opposing powers and forces which war within our bodies; for I believe we can in many cases foretell recovery or death with the same kind, if not the same degree, of certainty as that felt by an astronomer who predicts an eclipse of the moon, or a transit of Venus across the sun's disk, centuries before the epoch at which it actually occurs.

It is true that theoretically such an estimate as I have above alluded to would require for its mathematical accuracy not alone a knowledge of all the agencies which have controlled the growth of an individual man, and consequently of his powers of resistance to a malady, but also of the infinitely varied influences which, modifying his ancestors from the days of Adam and Eve, have left their impress of hereditary tendencies upon his being; and the sum may well seem appalling in its magnitude. Practically, however, our decisions are called for in a multitude of instances where such delicate calculation is not needful, and the merest tyro can recognize the fearful balance on the side of death; as, for example, when a patient with Bright's disease is attacked with double pneumonia, or when general tuberculosis supervenes in a constitution already broken down by long-continued phthisis.

Each succeeding year's experience in the solution of this ever-recurring problem, concerning life and death, will give the true and earnest student greater skill; he will learn to detect hereditary taint on the one hand, and ancestral vigor on the other, by evidences so slight as to be altogether inappreciable to the uncultivated perceptions of a novice; and he can thus glean atoms of truth, to serve as foundations for accurate prognosis, which will frequently enable him to foretell the course and termination of disease, with a certainty that may well seem to the uninitiated like the illumination of a true prophetic fire. And yet, gentlemen, it is only a correctness of calculation, from the most carefully-weighed data, supplied by indications as marvellously faint as those by which an Indian hunter tracks his quarry through the forest,—calculation to which, by long practice, any or all of you may attain, and towards which it shall be my constant effort to lead your steps in this pathway of medical science.

Having now, as I trust, convinced you that acquaintance with pathological anatomy will form a direct and important aid to success in your chosen profession, let us proceed to investigate these material phenomena of disease; and, since I believe that our studies will thereby be greatly facilitated, I will ask you to commence by entering with me upon a more minute examination concerning the essential nature of that morbid action in which all pathological changes of structure necessarily arise. As a preliminary to this, again, we must, however, first grasp the physiological idea of that *vitality* within whose limits morbid actions are of course displayed. Life, which has been abstrusely defined by Herbert Spencer, in his grand work on the Principles of Biology, "the definite combination of heterogeneous changes both simultaneous and successive in correspondence with external coexistences and sequences," may be with less completeness, but more brevity, characterized as that condition of organized bodies wherein the various functions, such as assimilation, nutrition, excretion, sensation, etc., are in an active state. These simplest phenomena of life are capable of actual demonstration in the lowest forms belonging to the animal kingdom, as for instance in the Amœbæ, those minute particles of bioplasm so familiar to microscopists. Of course the functions of development, growth, reproduction, locomotion, and so forth, which are generally in the animal kingdom the attributes of life in some of its stages, must usually enter into our consideration of the subject, although they are not essential to the idea of vitality.

Life may be either normal,—that is, nutrition, excretion, etc. may be so proportioned to one another that the organism possesses the greatest perfection of each of its powers, and then enjoys what we call Health,—or the various functions above named may bear a *disturbed* or *abnormal relation* to one another, constituting the condition we denominate Disease, the general, not quite universal, index of which in our race is Pain. Here, gentlemen, you have your life-work set before you almost in a single sentence, and it is as well the great business of our high and noble calling, from the days of Hippocrates down to the end of time, namely, to obviate in suffering humanity those disturbances of bodily action which constitute Disease, and to relieve, or at least palliate, their eloquent appeal for succor,—*Pain*. No earthly service can win for you a richer reward from the people of all nations and all generations; no human gratitude can compare with that poured forth by patients who have just been delivered from the agony of physical pain. How fortunate it would be for us, gentlemen, if it would only last!

Since disease essentially consists in some pathological change, involving a disturbance of assimilation, excretion, etc.,—in two words, is *Disturbed Life*,—it is evident that the causes of disease are any agencies whatsoever which produce such derangement, including, of course, all the innumerable powers and forces which surround us. Thus, the excess or privation of the air we breathe, the light and heat which promote our assimilation of food, the electrical forces which modify our nutrition, any of the myriad diverse influences which may be brought to bear upon and affect the growth, etc. of our frames, are at times the causes of disease.

Whatever insurmountable objections may be urged by theologians and sociologists against generally accepting the plausible doctrines of the development theory, I venture to assert that two of its primary dogmas, long dimly recognized in medicine, are capable of such application as to throw a flood of light over many obscure passages of our acquaintance with the causes of pathological alteration in our bodies. The first of these, the law of heredity, claims to account, you know, for the persistence of racial and family types; the second, the law of individual variation, professes to explain the occurrence of new varieties, which may

or may not become permanent. The evolution hypothesis, as I need scarcely tell you, gives a reason for the development of the higher or improved type, in the fact of its being fitted for a more perfect and complete life under the circumstances (climate, supply of food, natural enemies, etc.) which surround it; it accounts for each step in this progressive march of improvement, by the well-known tendency of offspring to vary slightly from the form, size, and so forth, of their progenitors, and the "survival of the fittest" of these varied forms, and of their progeny; but it seems to have been in great measure overlooked by medical men that, on this supposition, for every variation towards a higher, that is, a more perfect, type, the pendulum (to use a chronometrical simile) swings at least as far in the opposite direction of degeneracy, and some imperfection is implanted in others of a family, which increases the liability to death, although it may not eventuate fatally until old age creeps on the individual, or even until it accumulates power enough, by frequent or constant repetition and increment, during the lapse of centuries, to manifest itself in the tenth or the fortieth generation of his descendants.

Now, although, on the one hand, I think that the most ardent evolutionist must, if candid, admit that his hypothesis, as applied to the far-distant epochs of all prehistoric time, is utterly devoid of any absolute proof, and indeed is directly contradicted by some seemingly indisputable facts, yet, on the other hand, I believe we, in a like spirit of candor, must acknowledge that the theory of development, in its limited application to minor variations, accords remarkably with the events of our own era, daily transpiring before our eyes; and assuming, therefore, that this doctrine contains at least some grains of truth, it becomes obvious that it is with the vast army of degenerated and degenerating human beings, above referred to as on the road to extinction, that we physicians have to deal, since society, as now constituted, requires us to set ourselves against the course of nature (which on this theory calls for the speedy death of the sickly and the weak), because, as a rule, every man chooses his own life, health, and pleasure at the expense of deterioration for his race.

Hence, just as the evolutionist philosopher may claim to have obtained a clue to the mysterious development of organic life, through past ages, upward towards a higher type, in that pregnant phrase, "the survival of the fittest," so we, as physicians, may discover a universal key to those problems of hereditary disease among which our life-work is cast, in its antithesis, the funereal fiat which decrees for individuals, families, and races, alike, THE EXTINCTION OF THE UNFIT.

Moreover, we may deduce from this conception of all hereditary and diathetic diseases as being constituent and essential parts in the harmonious working of the eliminative element in nature's grand law of progress, the secret cause of brutes being so much more healthy than ourselves, since the ordinance which commands, in every kind of created beings, the destruction of the unfittest organisms, shortens, among animals and savage men, the action of that divine curse according to which the sins of the fathers shall be visited upon the children unto the third and fourth generation; by rapidly destroying, when unhindered through human devices, the weak and sickly, and also by preventing them from propagating their varieties, which are comparatively unfit for existence,—thus, with superhuman wisdom and certainty, keeping the race healthy and free from the taint of disease. As an illustration of this doctrine, consider for a moment how medical science has helped to change the original process of childbirth, which, you know, among animals or savage women is easy and relatively painless. Without physicians, a mother, savage or brute, whose pelvis varied much in the direction of unusual narrowness, would either bear still-born infants, and so fail to perpetuate her deformity, or (what would yet more efficiently accomplish nature's purpose of extinguishing the unfit variety) would herself perish in the pangs of travail. In civilized countries, however, by the aid of forceps, premature labor, and Cæsarean section, progeny of such unsuitable mothers has for generations been saved alive, and sent forth into the world to marry and procreate sons and daughters, who in their turn transmit this pain-producing idiosyncrasy, until at the present day multitudes of American and European families are infected with a hereditary tendency to narrowing of the pelvic straits, and the consequent fearful aggravation of parturient suffering.

Following up this view still further, I can see no reason to doubt that pathological variations of internal structure, which are conditional causes of disease, may be now handed down from parent to child, just as the peculiarities of feature, form of the skull, etc. of the Aryan and Semitic races have been transmitted from generation to generation; and in considering this subject it has occurred to me (although, since the idea regarding this valuable medical bearing of the Pangenesis theory, if not new, is certainly original, I give it to you only for what it may prove to be worth), it has seemed to me, I say, that an hypothesis inculcating the *inheritance of microscopic peculiarities* of formation would do much towards further explaining many obscurities concerning the way in which hereditary idiosyncrasies of disease occur. Thus, for example, a congenital smallness of the arteries supplying the feet may be the direct cause of senile gangrene coming on when the powers of life become feeble in advanced age; and, on the other hand, unusual width, for instance, of the bronchial arteries, hereditary in some families, may, by the freedom with which those arteries supply blood, predispose to active inflammation and lead to repeated attacks of pulmonary disease; or, again, an inherited narrowness of the smaller bile-ducts, discoverable only by the microscope, may tend to produce hepatic disorders. That microscopic groups of cells are controlled by hereditary influence is proved by the fact that individual hair-follicles can be, by inheritance, so modified during development as to produce zebra-stripes in crossing that animal with the horse, and that additional feather-matrices along the legs are transmitted in breeding from the bantam variety of domestic fowls. I think, therefore, we may rest assured that minute aggregations of cells, which go to make up the tissue of tiny nerves, blood-vessels, ducts, etc., are ruled by hereditary influence, just as we know that the arrangements of larger groups of cells, composing the Bourbon forehead and the Hapsburg lip, have been handed down from father to son in those dynasties for many generations.

As an illustration of these minute structural heirlooms producing disease, I may mention that I have seen in my own practice a mother and her three children all sufferers from an affection of the heart (congenital in the second generation), whose physical sign was a rough, diastolic, basic murmur, indicating, apparently, imperfection of one or more leaflets of the aortic valve; and doubtless many similar examples have already, or will ere long, come under your notice. Whole lectures might easily be occupied in discussing the bearings which this important phase of the development hypothesis may have or has upon our science; but I must content myself at present with thus merely hinting at its value to us as physicians, and with the hope of recurring to it for a few moments, under the head of Diathesis, when I come to speak of tubercle.

Although it is foreign to my subject, perhaps I may be pardoned for a brief suggestion that the *mode of utilizing* this acquaintance with nature's occult destructive operations is by counteracting these tendencies to death

in that incipient and feeble stage where a wise and close scrutiny, enlightened by this knowledge of natural laws controlling inherited disease, will often enable us to detect them. Thus, for example, the scions of a family journeying in the tubercular highway to extinction should be supplied with the most nourishing food, the purest air, and the most carefully-regulated exercise, encouraged to expand their lungs and develop their chests, and jealously guarded against catarrhal attacks, which, when they occur, must be treated with the most scrupulous care; heirs of a race which is travelling the gouty road to destruction ought to be subjected to suitable anti-arthritic agencies, selected from both hygienic and therapeutic influences; infants who creep along the syphilitic downward path to death need to have the virulent poison in their blood eradicated by judicious administration of the iodides and of mercurials; and so on throughout the whole catalogue of diathetic diseases.

And here let me urge, gentlemen, that you do not needlessly confuse your idea of disease by attributing to it any essentially incomprehensible nature. Excepting, of course, those cases of providential interposition (such, for example, as that commemorated by the Liars' monument, in a northern town of England) where Omnipotence interferes for a moment with the otherwise immutable ordinances which He has appointed for the government of the universe, all structural changes constituting disease arise, as I have already intimated, from the operation of fixed and determinate laws.

For instance, the entrance of a splinter into my flesh, and the abscess it may cause, are as much the effect of physical forces, which can be accurately calculated and avoided or counteracted when we have sufficient data, as the bruising of my hand should I deliberately strike it against the edge of this table; the penetration of an itch-insect into the skin, and the subsequent eruption and itching, are, again, as much the effects of physical force as the entrance of a splinter into the flesh; the introduction of trichina spiralis by the eating of diseased pork, and its consequent grave or fatal constitutional disturbances of life, are likewise as much the result of physical influences as the penetration of the itch-insect; and the inhalation and ingestion of the poisons (whatever they are) which produce ague, cholera, or typhoid fever, with their effects, belonging as they do to exactly the same category, are just as easily escaped, if we have the wisdom and take the care to avoid them; and, failing this, the resulting maladies are just as readily cured, if we know how to cast their exciting causes out from or to destroy them within our systems.

Furthermore, lest any devout fellow-Christian be tempted to accuse me of desiring (as it formerly was phrased) to fly in the face of Providence, permit me to add that I believe it is just as much our religious duty to guard our health and life, as God gives us knowledge so to do, against all these noxious influences, as it is to refrain from plunging into deep water if we are unable to swim, and as it is our duty to shield ourselves from the rain of heaven with sufficient fixed or movable shelter, or to protect ourselves against the thunderbolts from on high by means of the requisite electrical conductors.

Here, gentlemen, is the great field of labor towards true advancement of our science, not only for you and me, but for our descendants in the medical profession to the remotest posterity. There are a few diseases, such as Scabies and Favus, the causes of whose constituent pathological changes we know, and can remove with the same certainty with which we pluck a splinter from the flesh; there are a few others, such as Ague and Syphilis, whose causes physicians generally are ignorant of, but for which we possess antidotes, like quinine and mercury; but the great majority of maladies we as yet fail to trace to their immediate origins, and must for the present rest satisfied with treating only by relieving their most prominent symptoms, instead of at once eradicating the sources of disease.

Nevertheless, I am sure that, with the exceptions named above, for every twinge of pain, every unsightly deformity, and every premature death, proximately terrestrial causes do exist, which solely the thick cloud of our pitiful ignorance hides from our sight, and which, if seen, we could escape with the same kind of ease that saves us when we step aside from the path of a locomotive or avoid contact with a syphilitic sore. It is for you, gentlemen, to aid in lifting a little corner of this veil of darkness, and so to pave the way for our descendants in the healing art that they may penetrate farther into the boundless arcana of nature, and by wiser means and better-chosen remedies, throughout countless ages yet to come, diminish the sad sum total of human suffering in our world.

From the conception of LIFE, as the aggregated functions of the organism, and HEALTHY LIFE, or HEALTH, as the combination of these functions in that proportion which is consonant with the greatest perfection of the individual, while DISEASE consists in the disturbance of one or more functions and of their mutual relationship, you perceive, I trust, the exact scope of my original definition, that morbid or pathological anatomy (*i.e.* the anatomy of diseased structures) has for its subject all those unhealthy and abnormal changes in the tissues that arise from whatever cause which, in acting, disturbs any of the bodily functions.

For example, to recur to the homely illustration of a splinter in the flesh, the ligneous particle, pressing upon the tiny blood-vessels around it, disturbs the function of circulation, which was previously going on in a normal manner, and thus, as we shall see in the next lecture, sets up inflammation in its immediate neighborhood, becoming therefore a cause of disease. The structural changes which occur during the progress of inflammation, recognized either by the naked eye or by the aid of the microscope, form the morbid anatomy of the process, and constitute a kind of type of the alterations of tissue which it is my province to present to you and to explain. In doing this, gentlemen, I shall, as far as possible without trespassing upon the departments of my friends Dr. Tyson and Dr. Pepper, endeavor to so link the external characters with the microscopical appearances, and both with the clinical symptoms, as to somewhat relieve the tedium of this "meditation upon death," and at the same time contribute to that accuracy of Diagnosis and Prognosis which, as I have already told you, seems so pre-eminently important to every physician, and especially to the young practitioner.

THE LESIONS OF ENTERIC FEVER AS AN OCCASIONAL CAUSE OF PERMANENT INJURY TO NUTRITION.—In a paper on this subject read before the last meeting of the British Medical Association (*Brit. Med. Journal*, August 26), Dr. T. Clifford Allbutt drew attention to the convalescence from enteric fever, which was well known to be often tedious; and he raised the question whether the specific lesions of that disease, affecting as they did the instruments of absorption, might not sometimes be the cause of permanent marasmus. In enteria, the local mischief not only falls upon the patches of Peyer in the ileum, but spreads itself throughout the network of the mesentery. Any disease, therefore, which interfered with this system, like enteric fever within it, or chronic peritonitis outside it, would have its visible effect in hindering the absorption of fat and in preventing the laying on of adipose tissue. These considerations occurred to the author in consequence of his advice being sought in several cases of marasmus pure and simple, without local disease, without fever, and without adequate loss of appetite. In all of these a severe attack of enteric fever had preceded the marasmus.

ORIGINAL COMMUNICATIONS.

OSTEOLOGICAL NOTES.

BY HARRISON ALLEN, M.D.

I HAVE amused myself at odd moments in looking over cabinets of bones, and have noted down a few observations on the variety of osseous forms, both in health and disease. I would have them read in the spirit with which they have been prepared; not asserting in their behalf much that is either new or striking, but, for all that, trusting that they may prove to be at least interesting.

I have thought best to group my observations under distinct headings, each of which will serve as a title for a separate essay. They are as follows:

I. The facial region.
II. The senile skull.
III. The base of the skull.
IV. The long bones in health and disease.

I.—The Facial Region.

In the fall of 1868 a young man presented himself at the Wills Ophthalmic Hospital suffering from the effects of a serious injury of the upper portion of the face. A premature explosion of a blast had destroyed the vision of both eyes, and had broken in the bones composing the inter-orbital space, thus exposing a large cavity, evidently in the position of the ethmoid bone, which was filled with granulations. The face was much discolored by grains of gunpowder. The point that most interested me at the time was the fact that the man could eat nothing of a solid character: indeed, he could not masticate at all. The entire upper jaw was freely movable upward in the face. The teeth, however, were firmly rooted, and none were absent. I had previously noticed that skulls which had lain for a long time in exposed localities exhibited oftentimes entire destruction of the interior structures of the face, while the inter-orbital space remained intact and the form of the face was thus preserved. It would seem, therefore, that by destruction of this space the shape and function of the face are virtually destroyed, and, conversely, that no degree of mutilation consistent with preservation of the integrity of the inter-orbital area disturbs the facial contour.

The literature of osteology contains little with reference to the architectural value of this space. Ward, in his elaborate monograph, is content with remarking "that the thick bony arches [of the face] are well adapted for the resistance of mechanical violence, while its interior is constructed of fragile laminæ and slender processes, extremely irregular in form and disposition. The rationale of which scarcely requires explanation." Mr. Hilton, in his essay on "The Bones of the Head considered in Relation to the Functional and Anatomical Associations," confines himself to the brain-case, mentioning the face only as influenced in form by the growth of the sphenoid. Humphreys and Hyrtl are silent on the subject. In Holden's Osteology (p. 79) is found the best description of the bones between the orbits. The author speaks of the nasal processes of the superior maxillæ as supporting the nasal bones and contributing to form the inner margins of the orbits, and adds, with great justice (p. 109), that the immobility of the upper jaw depends upon its fixity by means of three buttresses,—the *nasal*, the *zygomatic*, and the *pterygoid*. The French authors, *vide* Malgaigne and Richet, follow this method essentially.

The face, as all will agree, is designed to afford protection to the eyes, nose, and teeth. Of these, the first-mentioned demand nothing for their well-being beyond the cavities through which they are approached and within which they are accommodated. Thus, the eyes and nose find in the orbits and nasal scrolls respectively everything essential to the performance of their functions as visual and olfactory organs. The *teeth* alone demand something beyond their sockets for the due enacting of their part. Muscles to move the lower jaw may take their origin some distance from that bone, and the force brought therewith through the lower jaw is expended throughout the entire facial region. Bearing this in mind, may we not consider that the facial region is a natural one, and that the great idea governing its construction is to protect the teeth and aid them in their work of mastication, and that the orbits and nasal chambers are of quite secondary value? The temporal fossæ and the malar bones are thus *functionally* facial, since they would not have existed but for the muscles (temporal and masseter) which arise from them.

In many animals the temporal fossæ are so extensive as to meet at the vertex; with such the orbits are not distinct from the temporal fossæ. With others, however, such as man himself, having a higher cerebral development, the muscles in question are unable to secure from the sides of the brain-case the purchase obtainable from the sagittal crest. To obviate this difficulty the temporal fossæ are deepened anteriorly, and the greater wings of the sphenoid bone and the orbital process of the malar bones are produced to secure by their union sufficient space for the origin of the temporal fibres. Thus the parts composing the outer walls of the orbits are seen to have "temporal" significance. The same principle may be applied to the zygomata, which in this sense can be said to have "masseteric" significance, since the masseteric muscles give them expression.

Each external angular process of the frontal bone lies in a line corresponding to the vertical axis of the malar bone and the angle of the lower jaw. Two of the articulations of the malar bone, viz., behind (with the zygomatic process of the temporal) and in front (with the malar process of the superior maxilla), are designed to resist a force operating from beneath; the remaining articulation, that with the frontal bone, is weaker, and has relations, as already seen, chiefly with the temporal muscle.

Turning to the anterior aspect of the facial region, we observe that the immobile upper jaw is forcibly struck from beneath, in every act of occlusion, by the mobile lower jaw along the line of the dental arch. To receive and distribute this force we have on either side two osseous pillars,—the root of the malar process for the molar teeth, and the ascending process for the canine tooth. These, however, are not of equal value, for "the bite" is not accomplished either at the same time or in the same manner. The lower jaw being composed of two curved levers uniting at a central symphysis, the side of each lever is seen to be stronger than its curved incisorial end. It is actually strongest at the position of the canine and first bicuspid tooth. It is at this point—the seat of prehension—that the main shock of "the bite" is received, and thence distributed along the axis of the canine tooth to the anterior border of the lachrymo-nasal groove (turbinated crest), which in turn transmits it to the outer and thickened border of the ascending process to the inter-orbital space, where it is broken up, the main portion continuing perhaps along the anterior wall of the frontal sinus to the vertex. A line drawn upwards from the axis of the socket of the canine tooth will, if the dental arch be not altered by loss of teeth or malformation, lie over the ascending process at its orbital border. This line may be appropriately called the *canine pillar*. The *molar pillar*, judging from the force of occlusion of the jaws

at its site, would at first sight appear to be stronger than the former. But in reality it is not so. A moment's consideration of the shape of the molar tooth with its three divergent fangs is conclusive to the effect that the force of "the bite" is here at once diffused, and has but a remote relation with the malar process, which, as has already been seen, entertains a relation almost exclusively with a force acting from beneath. Besides, the "grinders" do not require the same axial support as the "seizers." The incisor series is weak and unimportant. The teeth cut, as the name implies,—the lower teeth slipping behind the upper. The unpleasant sensation when these teeth are opposed edge to edge is due to the absence of support, save that which they receive from the insignificant intermaxillary arch.

Now, the space between the line of power on the side of the face and the lines of resistance on the front of it, being as it were one of comparative quiet, is selected for the position of the orifices of escape for important nervous and vascular trunks. May we not in this way explain the familiar fact that all these foramina—the supra-orbital, the infra-orbital, and the mental—are on the same vertical line?

By the light of the above facts, how meaningless become many of the terms employed in the description of the face! The central, weak, unimportant sinus of the superior maxilla is called the body. A recent slipshod writer gives the impression that the ascending process is hollow (!) The same processes are alluded to by Holden as though their chief use was to be found in supporting the "true" nasal bones. We have seen that this must be a small part of their work. The *true* nasal bones are the nasal scrolls, and the nasal bones, so called, are but opercular ossicles to the former, and in man these are rudimentary.

As practical points in this connection may be mentioned the effects of removal of the lower jaw upon the shape of the upper jaw. The force maintaining the curve of the dental arch being in such instances absent, the alveolar processes fall inward, notwithstanding the patency of the roof of the mouth. This is well exemplified in a case of gunshot wound to the lower part of the face, recorded by Ribes (*Dict. des Sciences Nat.*, 1818, xxix. 425.)

In conclusion, it may be suggested that a review of the condition of those individuals upon whom amputation of the lower jaw has been performed would be interesting, as would also the results *in toto* of those cases where naso-pharyngeal polypus has been removed by depressing the face after cutting through the root of the nose.

ELECTROLYSIS.

Read before the Philadelphia Hospital Medical Society, May 20, 1871.

BY T. D. DAVIS, M.D.,

Resident Physician.

THE destruction of morbid growths by means of electrolysis has attracted a good deal of attention in this city for the past few months. The difficulty of procuring any reliable information concerning its efficacy and mode of action induced Dr. R. D. Murray and myself to make some experiments on dead tissue and animals. The results are substantially as follows. Eight experiments were made with a battery made by Stöhrer, of Dresden. This gives a continuous current from thirty small cells, each cell having one carbon and one zinc plate. The fluid used is dilute sulphuric acid,—one part to eight of water.

1. Two steel needles, the thickness of knitting-needles, connected with the battery, were introduced into the tissue of a healthy liver, within half an inch of each other. Immediately afterwards bubbles of gas commenced to issue from the cut surface of the liver, which was nearer to the points of the needles than the place of their introduction. In four minutes the needle connected with the negative pole became very loose, and bubbles of gas escaped around its point of entrance. In five minutes the needles were withdrawn, the negative one coming away easily, while the positive one, which was blackened and roughened, was somewhat adherent. On cutting across the track of the negative needle, a cavity, one-quarter by one-eighth of an inch in diameter, was discovered, surrounded by a darkened gelatinoid tissue, one-eighth of an inch in thickness. Extending from this to the point where most of the gas escaped was a mass resembling that surrounding the cavity, looking more like softened glue than healthy tissue. The track of the positive needle was black and charred, but the tissue immediately surrounding the point was firmer and whiter than in other parts.

2. The needles were introduced as before to a depth of three-quarters of an inch, and approached within half an inch of each other at the points. At the end of one minute gas escaped from about the negative needle. In three minutes the point of entrance of the positive needle was darkened, and in seven minutes gas escaped from it. At the same time the negative needle became loose, and gas ceased to come to the surface in bubbles. At the end of ten minutes the needles were removed, and, on section, their tracks presented exactly the same appearance as in the first experiment. The change of tissue was, however, somewhat more extended. The tissue between the needles, except immediately around them, preserved its original appearance.

3. The needles were reintroduced and kept in twelve minutes, but the tissue presented no new features, except that the changes were somewhat greater.

4. They were next inserted into a dense fibroid tumor of the uterus, the needles penetrating to the depth of half an inch, and being three-quarters of an inch apart at their points of insertion, but gradually approaching to within half an inch of each other. Immediately afterwards a crackling noise was heard, like that produced by frying meat, and soon from the point of entrance of the negative needle bubbles commenced to issue, until a sphere of white foam was formed half an inch in diameter. On removing the negative needle at the end of seven minutes, a white foamy fluid exuded from the opening, and a black or darkish fluid from the opening left by the withdrawal of the positive needle. Around the negative needle the capsule was dissected up, the tissue beneath being very soft, while it was darkened, dried, wrinkled, and contracted around the positive needle. On section, the track of the negative needle was surrounded by a transparent jelly-like mass, the original tissue of the tumor having been yellowish-white, opaque, and very firm. Around the course of the positive needle the tissue was whitened, dried, and friable, cutting like cartilage. The temperature was increased, but it was not so high as that of the hand. There were no connecting lines of changed tissue between the two needles.

5. The needles were next introduced into the fundus of a uterus, at about the same distances as in the former experiments. They were allowed to remain for fifteen minutes, at the end of which time the temperature of the tissue between the needles was only increased from 60° to 86° F.; yet the tissue around the negative needle was reduced to a jelly-like consistence, and that around the positive had become dry and hard as before.

6. The needles were introduced two inches and a half apart, and to the depth of an inch, in the mammary gland of a woman who had been dead only an hour. Soon after their insertion a lobulated tumefaction arose about them, mostly above the point of the negative needle, and a fizzing sound was heard. The needles were withdrawn in twenty minutes. On examining the body several hours afterwards, the point of entrance of the positive needle was found surrounded by an area of dry leathery skin of a light-brown hue, one inch in diameter; that of the negative needle by wrinkled skin of normal color, one-eighth of an inch in diameter. The skin surrounding the point of entrance of the negative needle was blue. Around the track of the positive needle was a hard lump the size of a walnut, while around that of the negative the glandular tissue

was condensed; a whitish-yellow fluid escaped from its opening, and around its point was a cavity of sufficient size to contain the first joint of the middle finger. The wall of this cavity was three-eighths of an inch thick, condensed, and of a white color externally, and internally surrounded by a gelatinoid substance. The track of the positive needle cut like cartilage; the tissue around it was white, very tough, and slightly elastic. A brownish track connected the points of the two needles.

7. The positive needle was introduced into the other breast of the same body, to the depth of an inch, and the negative pole applied externally by means of a charcoal electrode covered with dampened muslin. The current was continued for ten minutes. The tissue surrounding the point of entrance of the needle was hard and brown for about one-eighth of an inch. The track of the needle was blackened, and the tissue yellowish and friable for the distance of one-quarter of an inch.

8. The needles were introduced into the œdematous scrotum of a man dead but a short time, and retained for half an hour. The changes produced were the same as those detailed in the preceding experiment, except in extent.

The remaining experiments were made with a fifteen-cell Bunsen battery, furnishing a continuous current, and holding five quarts of nitric and two pints of sulphuric acid diluted twenty times.

1. The needles were introduced four inches apart to the depth of one inch in a liver. In one and a half minutes there appeared white bubbles at the point of entrance of the negative needle, which kept increasing until the needles were withdrawn, at the end of twenty minutes. The negative needle came away easily, the positive with some difficulty. The track of the positive needle was slightly blackened, and the tissue for one-quarter of an inch around the negative needle was softened and broken down. There appeared no line of connection between the two.

2. In this experiment fourteen cells were used, arranged for quantity of two, the needles inserted into the liver used in the preceding experiment. The same characteristics appeared as before, but not so marked, and the lesions after twenty minutes were only about one-half as extensive as in the former experiment.

3. The battery was rearranged as in No. 1, and the needles kept in a liver for three-quarters of an hour. At the end of that time a fluidounce of white frothy matter had accumulated at the point of entrance of the negative, and about a teaspoonful of blackened fluid at that of the positive needle. On section, the tissue around the positive needle was broken down to a softened grayish mass, through which were scattered little hard pellets like grains of sand. Around the point of the negative needle was a large cavity besides that caused by the breaking down of tissue, *as if it had been dissected up by gas.*

4. A cat was put under the influence of chloroform, and the needles introduced into the right thigh, one inch apart. Soon the fizzing sound was heard, which continued until the needles were withdrawn, at the end of ten minutes. The tissue was softened around the negative and much hardened around the positive needle.

5. The needles were then introduced into the left thigh of the same cat, and retained for ten minutes. In consequence of the protracted use of chloroform, the heart had ceased to beat, and there were no signs of respiration. The positive needle was withdrawn and applied around the neck and over the lungs, with the effect of soon restoring the animal to consciousness. In the post-mortem examination, several days afterwards, the skin on the right thigh ulcerated for an inch in diameter. The muscles were separated down to the heel, but not to the bone. There was a cavity under the skin large enough to hold a walnut. The left thigh presented similar appearances, the cavity being as large as an egg, and the muscles separated down to the bone, as well as softened and eaten away. Part of the femur was denuded of periosteum, but not eroded.

In April last, Drs. Murray and Emory Eshelman performed the operation of electrolysis on Henry Williams, colored, æt. 28, in the wards of Dr. Harrison Allen. The man had an enlarged lymphatic gland, the size of a goose-egg, in the lower maxillary region. The needles were attached to a Stöhrer battery of thirty cells half filled with the solution, and retained in the tumor for fifteen minutes. Suppuration followed without much pain, diminishing the tumor one-half. In three weeks the operation was repeated, the cells being full and the needles retained for ten minutes. This caused a thorough breaking up of the subcutaneous hardening and the continuous reduction of the mass. He suffered pain for but one day, and was not confined to bed at all. He was etherized on both occasions.

From these experiments we are inclined to look favorably upon electrolysis as a means of extirpating morbid growths. Whether it will prove as successful as the knife remains to be shown. That it is dangerous we do not believe; and if it fails the knife remains. It is followed by but little pain. As to the mode of its performance, we have but little to say. It is not, as has been so frequently stated, a cooking of the flesh, for the increase in temperature is slight, but is a complete breaking down of the tissue. That this is not caused by heat is further shown by the appearances of the tissue along the openings caused by the escaping gas, which do not resemble those usually produced by increase of temperature. In the experiments on dead tissue, the hardening around the positive pole led us to watch with interest the result of the hardening in the living cat. The greater part of it softened, suppurated, and was discharged. Part resumed its normal condition. This would seem to strengthen the supposition that the action of electrolysis is dependent upon the simple decomposition of water and perhaps of some of the salts of the blood, moisture around the negative needle being decomposed into its original elements,—the hydrogen escaping and forming the bubbles, the oxygen going to the positive pole and causing the oxidation of the needle noticed. Thus a circuit was established. On the decomposition of the moisture the hydrogen escaped, assisting to alter the tissue into the jelly-like mass noted. This left a dry hard tissue around the positive pole, which was in time partly able to resume its normal function, but part, being dead, was softened, sloughed, and was discharged. We propose in some future experiments to obtain a quantity of the escaping gas and to test it, and to investigate the effects of hydrogen gas on the tissues of the body.

ON A CASE OF DOUBLE ANEURISM OF THE FEMORAL ARTERY.

ONE ANEURISM CURED BY FIVE AND ONE-HALF HOURS' DIGITAL COMPRESSION.

BY J. FRAZER BOUGHTER, M.D., U.S.A.,
Fort Randall, Dakota Territory.

JAMES R., æt. 24 years, a soldier of the 22d Infantry, presented himself August 4, 1871, with the following history. He has always had good health, except during an attack of rheumatism about three years ago, which lasted three months.

While performing guard duty in bad weather, last winter, he had some pain in the right knee; since then, when he is exposed to bad weather, he feels some little pain in the right knee and the muscles of the right thigh.

About two weeks ago, his attention was first attracted to a swelling on the inner and anterior portion of the right thigh, by reason of the pain; this pain, paroxysmal in character, was felt shooting from the knee along the inner side of the thigh to the groin. Exercise increased it. He does not think the swelling has increased since first noticed up to this time (August 4, 1871).

He was lifting heavy logs (two weeks ago) at a saw-mill, when his right leg slipped from under him backwards, and at the same time he felt a "pain in the thigh."

Externally a swelling of considerable size is perceptible, the thigh appearing much larger than the left thigh at the corresponding point.

Examination reveals a pulsating tumor, of the size of a large hen's-egg, situated in the course of the femoral artery, at the junction of the upper and the middle third of the thigh, the tumor encroaching upon the lower portion of the upper third of the artery.

Circumference of the right thigh 7½ inches below the anterior superior spinous process of the ilium, 19½ inches; of the left thigh at the corresponding point, 18 inches.

Circumference of the right thigh 10 inches below the anterior superior spinous process of the ilium, 18¾ inches; of the left thigh at the corresponding point, 17½ inches.

While making the examination, I observed a pulsating swelling, about the size of a small hen's-egg, situated in the groin over the course of the femoral artery. Its upper extremity was close to and extended slightly under Poupart's ligament, its lower reached within one and one-half inches of the upper extremity of the lower tumor, thus bringing the two within one and one-half inches of each other, while the femoral artery, apparently somewhat enlarged, was distinctly felt between them. The glands over this tumor were slightly, if at all, enlarged, and could be distinctly isolated by the finger. The aneurismal thrill was distinct in both tumors, but more so in the one situated in the groin. Firm pressure over the artery (and at the mouth of the sac), backwards and downwards against the pelvic brim, completely arrested the pulsation in both tumors. The patient said there had always been a little swelling in the groin since he was eight or nine years old, and that it had not increased in size since then. He never knew that it pulsated, and never had any inconvenience from it. His pulse was regular and full, beating sixty per minute.

August 4.—Treatment commenced at 1 P.M. Pressure upon the femoral artery was made with the thumb. Gave ext. aconit. fluid., gtt. iij. This pressure was constantly maintained till 6½ P.M., when, the patient becoming restless, it was discontinued. At this time the lower tumor had diminished in size; pulsation was not so marked. No change in the upper tumor was observed. Gave liq. morph. sulph., ℥j, at bedtime (9 P.M.).

August 5.—Patient slept well; no pain this morning; the lower tumor has diminished one-half; pulsation much less. He thinks the upper tumor is also smaller. Continued aconite gtt. iij. ter die. Diet—toast, milk, and tea.

6.30 P.M.—Upon visiting the hospital, I found the pulsation had *entirely ceased* in the lower tumor; its size was much diminished.

August 6.—Slept well. Pulse 60. The lower tumor is now felt as a hard lump. The pulsation is diminishing in the upper tumor. The swelling of the thigh is much less.

Circumference of the right thigh 7½ inches below the anterior superior spinous process of the ilium, 19¼ inches; of the right thigh 10 inches below the same point, 18½ inches.

Aconite continued as before.

August 8.—The lower tumor now being cured, pressure was again made at the mouth of the sac (of the upper tumor), at 1 P.M., in the hope that it might be cured if the patient could bear the pressure long enough; it was continued for six hours, when some reduction of size was observed.

August 9.—The right thigh is a little swollen. The patient complains of pain at the seat of yesterday's pressure.

Circumference of the right thigh 7½ inches below the anterior superior spinous process of the ilium, 19¼ inches; of the right thigh 10 inches below the same point, 18½ inches.

Pulse 56. Continued aconite. Diet increased in amount.

August 11.—Pulse 56. Circumference of the right thigh diminished to 19 inches at the upper point of measurement, and 18 inches at the lower point.

August 13.—Dose of aconite increased to eight drops three times a day.

August 18.—The patient was discharged from the hospital, feeling well, with the lower tumor entirely cured, and the size of the upper much diminished, it giving him no inconvenience.

It is somewhat remarkable that an aneurism so large should be cured by only five and one-half hours' pressure. As the circulation is still maintained through the upper tumor, the current of blood has made its way to the lower extremity by means of the profunda femoris and its anastomoses. The situation of the upper aneurism necessitating pressure at the very mouth of its sac, the force of the current of blood returning as soon as removed, is thought to be the only reason this one has not also yielded.

If it had been situated but a few inches lower, it is fair to presume, from the fact that the lower aneurism was so readily cured, that digital compression longer maintained at the groin would have caused its obliteration also.

The difficulty of curing inguinal aneurism even by compression over the external iliac is well known, nothing less than its ligation being generally successful.

As this patient suffers no inconvenience, he is allowed to go about, being still kept under observation.

CREASOTE IN CHOLERA.

BY G. B. LARTIGUE, M.D.,

Blackville, S.C.

THROUGH the columns of the *Medical Times* I beg to ask the attention of physicians to the use of creasote as a remedy in cholera.

I have used it continuously for nearly twenty years in all stages of dysentery and diarrhœa, with great satisfaction to myself and benefit to my patients; relying almost entirely on it for curative effects. I administer it to adults in doses of four drops every hour and a half or two hours, combined with about twenty grains of bicarbonate of soda or potassa, mixed in syrup or honey. More recently I have substituted for the carbonates about eight grains of chlorate of potassa in each dose, and in my practice have very rarely added an opiate or astringent to the mixture. I do not, however, consider the administration of opiates and astringents inappropriate in severe cases, nor do I advise the use of creasote in lieu of these medicines or other general treatment.

From my experience in the use of this medicine in these diseases, I am led to believe that it is not unlikely that in sufficiently large and often-repeated doses it will be of great service in the treatment of cholera, and perhaps that it might prove a valuable prophylactic, in doses of one or two drops to each glass of drinking-water.

I have frequently administered it in typhoid fever, with apparent advantage to my patients, and am satisfied that in the bowel-affections incident to the life of armies in the field it would make the count stronger on the roster "for duty."

The object of this communication is to ask a fair test of this remedy by physicians who have to treat cholera.

A SOUND LODGED IN THE UTERUS.—A woman (*American Practitioner;* from *Schmidt's Jahrbücher*) allowed a midwife to introduce a sound into her uterus for the purpose of procuring abortion. The sound disappeared in the genitals and could not be found. Abortion followed. About four months later the woman observed a small tumor near the umbilicus, which proved to be the sound. The os was dilated by means of a sponge tent, and in the anterior wall of the uterus was discovered the other end of the sound, which had perforated the uterus near the internal os, and had penetrated upward between the bladder and the uterus. Attempts to remove the sound by way of the vagina failed, and it was finally taken away through an incision made into the abdominal parietes. Recovery followed without further disturbance.

NOTES OF HOSPITAL PRACTICE.

UNIVERSITY OF PENNSYLVANIA.

CLINIC OF PROF. AGNEW, SEPTEMBER 6, 1871.

Reported by Dr. Elliott Richardson.

FISTULA IN ANO, WITH PHTHISIS.

THIS was a case of several years' duration, in a man fifty-two years of age. On an examination of the region of the fistula, a small external pile was seen, and extending from the anus a short distance towards the sacrum was a line of granulation tissue, in the sacral extremity of which the fistulous opening was situated. That this was a complete fistula was proved by the fact that fecal matter, when of a fluid consistence, passed through it; the papular appearance of the opening pointed to the same conclusion.

Associated with this trouble the patient had extensively-developed phthisis, a large portion of the right lung being involved. He was emaciated and anæmic, slept badly, and had a poor appetite. With regard to the propriety of an operation for the cure of the fistula in this case, Prof. Agnew said he should decline performing it, not for the reason that phthisis existed, for he considered this alone to be no contra-indication.

He believed that the pressure upon the hemorrhoidal veins which have no valves, transmitted from the abdominal walls during the frequent coughing-paroxysms occurring in consumption, interfered with the proper circulation of the blood in that region, and that the resulting impaired nutrition favored the formation of abscesses in the ischio-rectal fossa, which may terminate in fistulæ. Further than this, he believed, there was no connection between the two affections. The reason for declining an operation in this case was the poor reparative power of the patient, which would render sloughing as a result of such procedure quite probable. The patient was ordered to inject the fistula two or three times a day with the following mixture: Liq. ferri subsulph., ʒss, aquæ, fʒij, and to take tr. nucis vom., gtt. v, inf. gent. comp., fʒss, three times a day.

HYDROCELE AND HERNIA.

The patient was a man, æt. 27, who, until he had reached the age of eighteen years, had an undescended testicle; at that time the gland came down into the scrotum. About one year ago, enlargement in the neighborhood of the external abdominal ring of the same side was first noticed; this had gradually increased up to the time of his presentation at clinic. Whatever may have been the nature of this tumor at first, that now presented was found, after careful examination, to be translucent, and was undoubtedly a hydrocele of the cord.

Although no hernia was apparent at this time, yet the patient stated that it frequently came down, and that on this account he had for some time worn a truss.

Prof. Agnew said hernia was a frequent sequel of the descent of the testicle in cases of this character, but, as the gland remained for a long time in the canal between the internal and the external abdominal rings, the former had time in most cases to contract firmly before the testicle was expelled into the scrotum. He directed in this case the use of a truss, for the purpose of preventing the descent of the hernia. The hydrocele was still small, but the patient was advised to return when it should have attained considerable size, in order to have the fluid drawn off, and tincture of iodine subsequently injected, with the view of effecting a permanent cure.

HYDROCELE.

This little child, fourteen months old, had a swelling of the right scrotum. This enlargement made its appearance after an exhausting illness, about three weeks before he was brought to the clinic. The testicle was situated at the bottom of the scrotal sac, and the tumor extended from it up into the external abdominal ring. It was tense, and no succussion corresponding with movements of the abdominal walls was perceived. It was rather firmer than hernia is usually found, and when examined by transmitted light was seen to be translucent.

Prof. Agnew said this was a case of hydrocele occurring in a child whose health had been enfeebled by disease. This is a disease not uncommon in children, either as a congenital affection, or under conditions similar to those which have existed in this patient, and in either case generally disappears in the course of time without surgical interference. Recovery may be aided in obstinate cases, however, by the frequent use of a solution of muriate of ammonia. Should this fail, then it would be advisable to introduce a single thread through the sac, puncturing, and allowing the fluid to flow off; the inflammatory action induced will result in cure. This thread should not be allowed to remain over twenty-four or thirty-six hours.

It was directed that the following lotion be applied to the tumor two or three times a day: Ammon. muriat., ʒj, aquæ, fʒiv. Should no improvement be manifested under this treatment after the lapse of three or four weeks, then the introduction of a thread would be recommended.

DOUBLE VARUS.

A little girl, aged three years, was presented at clinic, who was the subject of a congenital deformity of this nature in a marked degree.

The toes were inverted to a position at right angles with the normal direction of the foot, and the soles drawn up so that the child when erect rested upon the outer borders of the feet. In consequence of this deformity, the skin in these localities was much thickened, and underlying it were bursal sacs forming bunions.

The proximate cause of varus is the contraction principally of the tibialis anticus and the muscles attached to the tendo-Achillis.

Prof. Agnew said the treatment indicated in the case was the subcutaneous division of the tendo-Achillis, and, possibly, of the tendon of the tibialis anticus, and the forcible eversion of the foot, which should be retained in a proper position by a metallic splint. This splint has a shoe attached, and admits of motion of two kinds at the ankle,—one antero-posterior, which is free, the other lateral, which is regulated by a screw, enabling the operator to abduct the foot to the extent desired. This splint should be worn until all tendency to deformity has been overcome.

Ether was then administered, and the skin punctured with a sharp-pointed tenotome opposite the border of the tendo-Achillis. A probe-pointed tenotome was then introduced and the tendon divided from behind forward. Previous to puncturing, the skin was drawn a little aside, so that the external wound should not correspond with the point at which the tendon was divided. The foot was then everted without tenotomy of the tibialis anticus.

After the section of the tendo-Achillis was accomplished, the small external opening was closed with a strip of adhesive plaster. The same operation was repeated upon the other foot. A piece of linen coated with ungt. zinc. ox. was then firmly bandaged upon the outer border of each foot, and the metallic splint above described was applied.

The lecturer said the splints should be left undisturbed for twenty-four hours, when they should be removed, and the limbs bathed with alum and whiskey. This should be repeated for two or three days, after which the treatment would be regulated by the ability of the skin to tolerate pressure. He said these cases required the most careful watching throughout, in order to prevent the recurrence of deformity or the production of excoriation, rendering removal of the splint necessary.

EPISCOPAL HOSPITAL.

RUPTURE OF THE MIDDLE MENINGEAL ARTERY, CAUSED BY A FALL.

Reported by FRANCIS L. HAYNES, M.D., Resident Physician.

A. T., æt. 24, was admitted to the hospital, August 31, 1871, at 10.30 A.M. The following history was subsequently obtained from his friends, for the patient himself could not speak English. At seven o'clock of the morning of admission, while wheeling a heavily-laden barrow on the "roof of a shed two stories in height," the patient lost his balance and fell to the ground. For about thirty minutes afterwards he was without consciousness; he then revived and spoke to

his friends for a few minutes, but consciousness again left him during his transit to the hospital in a wagon.

On admission, the patient complained a great deal of pain in his left shoulder; the clavicle was found to be fractured at its sternal articulation, and the parts surrounding it contused and swollen. He was perfectly conscious, spelled his name when asked to do so, inquired eagerly concerning his condition, and, indeed, presented no symptom of injury of the brain. The clavicle, the acromial portion of which projected slightly upwards, was restored to its position by manipulation, and the man was placed on his back and left alone. On the return of the resident-surgeon a few minutes afterwards, the patient was vomiting profusely, his respiration was stertorous, and he was entirely unconscious. The left pupil was irregularly dilated. The pulse was slow and full. Three ounces of blood were abstracted from the median basilic vein, and an equal quantity from the back of the neck by means of wet cups.

12 M.—Spasmodic contractions of the muscles of the chest and extremities came on, during which the body was violently agitated. Each paroxysm lasted for about three minutes, and they were separated by intervals of five minutes. They continued until 5 P.M., when an enema of ℥ss turpentine was administered, after which they quickly ceased.

8 P.M.—The attendant noticed a rise in the patient's temperature.

11.30 P.M.—Temp., 107.5°. Skin dry; face flushed. Pulse 122, weak, compressible. Pupils both irregular; both moderately dilated. Respiration is very stertorous. The patient cannot be aroused by the application of any external irritant. Urine passes from him involuntarily. 12 P.M.—Temp., 109°. 12.30 P.M.—Temp., 109.5°.

September 1.—No change in the patient's condition occurred until his death at 2.10 A.M. At 1 A.M. his temperature was 110°; at 1.30 A.M., 110°; at 2 A.M., 111°. At 2.30 A.M., twenty minutes after death, the temperature of the body was 109°.

Autopsy, twelve hours after death.—The body was of large size and very well developed. Rigor mortis had set in.

The head and the left shoulder were the only portions of the body examined.

Head.—On removing the calvarium, considerable venous congestion of the dura mater was discovered. A large, dark, soft clot, weighing three and a half ounces, was found lying between the internal table of the skull and that portion of the dura mater which covers the lateral aspect of the middle and posterior cerebral lobes. On examining the dura mater minutely, a small opening was discovered in the coats of the posterior branch of the middle meningeal artery, three-fourths of an inch above its bifurcation. The opening was of sufficient size to permit the insertion through it into the calibre of the artery of a lead wire, such as is ordinarily used for sutures.

The surface of the brain under the clot was greatly and permanently flattened. The medulla oblongata was pressed to the right side. The vessels of the pia mater were distended with dark blood. The substance of the brain presented nothing abnormal. On removing the encephalon, several ounces of dark semi-coagulated blood escaped from the spinal canal.

Clavicle.—Upon exposing the left clavicle, a fracture was discovered separating the posterior portion of the sternal articulating surface from the shaft of the bone. The larger fragment was displaced in a slight degree, projecting inwardly and upwardly more than in the natural condition. Considerable effusion of blood into the neighboring tissues had occurred, forming a firm tumor, and giving to the hand applied over the region of the clavicle the sensation of greater displacement than really existed.

CHLORAL IN TOOTHACHE.—Dr. David Page recommends (*Brit. Med. Journal*, September 1) the introduction into the cavity of a carious tooth of a few grains of the solid chloral hydrate as a remedy in toothache. In a case which he briefly reports, he says, "the toothache was relieved in a few minutes; aching did not return all night, and, when it did in the morning, was again relieved by the same means."

POISONING BY PHOSPHORUS, AND ITS TREATMENT.—Dr. Vetter, of Dresden (*Virchow's Archiv*, August 15, 1871), in the course of a long article on this subject, says that there is no sufficient reason for attributing the poisonous effects of phosphorus to its conversion into phosphoric acid within the body, and shows that they are not at all similar to those produced by a concentrated acid, since there is no disintegration of the blood-corpuscles. Much larger quantities of phosphoric acid may be taken with impunity than can possibly be developed from the small quantity of phosphorus which often proves fatal. He believes, therefore, that phosphorus is poisonous in consequence of its volatilization within the stomach, by which it is enabled to penetrate through the coats of the stomach, and he refers to an experiment of Bamberger to show that it does pass readily through organic membranes. It seems to have the further power of converting the protoplasma, especially in the epithelia of the gastric follicles, in the heart, liver, and muscles, into fat.

In regard to the treatment of poisoning by phosphorus, Bamberger says that the volatilization of the phosphorus should be prevented if possible, and recommends that a solution of sulphate of copper should be administered to the patient, by means of which a phosphate of copper is formed. Sulphate of copper is, however, sometimes immediately vomited, before the reaction can have taken place; and in these cases it may be substituted by the acetate of copper, which, however, reacts more slowly with phosphorus, even when vinegar is added to it. Dr. V., however, has found oil of turpentine a much more reliable antidote. This has also the power of preventing the volatilization of phosphorus, as may be satisfactorily demonstrated by pouring a few drops of the former into a test-tube which contains a stick of the latter in a little water. Moreover, when phosphorus is dissolved in oil of turpentine, a spermaceti-like crystalline mass is formed, which may be given, dissolved in alcohol, to dogs or rabbits without producing poisoning or vomiting. All varieties of turpentine are not equally efficacious, the rectified spirit of turpentine being wholly without antidotal power. On the other hand, the oleum terebinthinæ gallicum, which contains a good deal of oxygen, possesses them in the highest degree. In the treatment of a case, the sulphate of copper in emetic doses should first be given every quarter of an hour. After emesis, ten grammes of oil of turpentine (gallicum) in mucilage should be given in four doses in the course of an hour. Milk and all other articles of food containing fat or oil should be avoided, as phosphorus is dissolved by them and its absorption thus promoted. Mucilaginous drinks, opium, or the application of leeches to the epigastrium will be found serviceable where the abdominal pains are severe.

FORMATION OF CALCULI UNDER THE PREPUCE.—Dr. W. H. Nelson (*Pacific Med. and Surg. Journal*, Sept., 1871) reports the case of a Chinaman who, as the result of an accident in early life, was the subject of phymosis. The opening through the prepuce, which was elongated to the extent of four inches, was so small that it would scarcely admit the end of a silver probe. When he urinated, the foreskin would distend like a bladder to the size of a man's fist, causing great suffering, and emptying itself very slowly.

The patient was placed under the influence of chloroform, and circumcision performed, when thirty-eight calculi, varying in size from that of a No. 6 shot to that of a buckshot, were removed.

THE USE OF CARBOLIZED CATGUT LIGATURES.—Dr. George Buchanan reports in *The Practitioner* for July, 1871, a case of diffuse traumatic aneurism upon which he had operated by laying open the sac and applying a ligature both above and below the wound in the artery. Carbolized catgut ligatures were used, because it was thought they would produce obliteration of the artery without ulcerating through its coats. Considerable discharge took place, but from first to last not a trace of decomposition or putrefaction could be observed. The most careful examination of the discharge failed to detect any appearance of the catgut ligatures, and they were probably retained and imbedded in the tissues, occlusion of the vessels taking place without ulceration of the coats of the artery and discharge of the ligature. The patient made an excellent recovery.

PHILADELPHIA
MEDICAL TIMES.
A SEMI-MONTHLY JOURNAL OF
MEDICAL AND SURGICAL SCIENCE.

PUBLISHED ON THE 1ST AND 15TH OF EACH MONTH BY
J. B. LIPPINCOTT & CO.,
715 and 717 Market St., Philadelphia, and 25 Bond St., New York.

MONDAY, OCTOBER 2, 1871.

EDITORIAL.

THE PHILADELPHIA MEDICAL TIMES.

OUR subscribers will perceive that we have made a slight alteration in the title of our journal. It has been thought expedient to do this upon beginning a new volume, because the experience of the past year has demonstrated the necessity for a name which shall belong to it exclusively. It will, therefore, hereafter be issued as the PHILADELPHIA MEDICAL TIMES.

In adding to the original title of this journal the name of the city in which it is published, we disclaim any intention of making its policy subservient to Philadelphia interests, but, on the contrary, shall be unremitting in our endeavors to render it thoroughly national in spirit and representative not so much of a city as of a great country.

TO THE CLASSES OF 1871–72.

THE large number of students already attending the preliminary lectures and clinics in this city, promises fairly for the attendance upon the regular courses of our two great medical schools,—the University of Pennsylvania and the Jefferson Medical College. Never in the history of preliminary courses have we known so many in attendance upon them. That this is a result of the increased facilities which have recently been extended to students, we cannot for a moment doubt. Nor are we surprised that this extension did not make itself felt earlier. The history of the new movement was given in the issue of this journal for March 15,—the Spring Students' number. It began with the endowment of the Chairs of the Auxiliary Faculty of Medicine in the University of Pennsylvania by Dr. Geo. B. Wood, in 1865. It did not, however, attain its present stage until two years ago at the Jefferson College, and a little later at the University: indeed, it may be said that the experience of the past year or two has been necessary to place the new arrangements upon a thoroughly practical and at the same time systematic basis. With these facts remembered, we confess ourselves surprised to see the reaction set in so soon after a depression which we are bound to admit was in part owing to a disposition to rest upon the laurels of the past. We are not of those who would lay the blame of the acknowledged unsatisfactory condition of medical education in this country altogether at the doors of American medical students. That they alone are not responsible is shown by the manner in which they have taken advantage of the increased facilities not only in Philadelphia, but in all the other large cities of the Union; and we will venture to say that in the main they will be ready to meet such future demands upon their time and qualifications as may be required by a constantly advancing standard of medical culture. That our method is still sadly deficient, as compared with those adopted abroad, cannot be denied; but we cannot force upon the mass of students a system of study which must extend over four or five years, and which shall be compulsory, when the conditions naturally existing in a new and rapidly-growing country, with its great demands on the physical energies of a people, and the unsettled state of its educational system, actually forbid such a course.

To those whose opportunities have given them the advantage of a collegiate education and a consequent higher general culture,—and there are many such,—we would suggest that a course analogous to that pursued abroad is by no means impossible in Philadelphia, and, we have no doubt, also in other cities. Indeed, it has long been the practice with young gentlemen in this city, whose opportunities permitted, to take a course precisely similar, except as to the date of their final examinations, to that which has recently been adopted at the Harvard Medical School, and which has met with such general approval. The plan has been to take three courses of lectures in their three years of study, devoting themselves during the first year to four branches, Anatomy, Physiology, Chemistry, and Materia Medica, and in the two succeeding years to the additional didactic courses, with Clinical Medicine and Surgery. Now, if to those pursuing such a course an examination were permitted at the end of the first year, we would have a plan practically identical with that which must be pursued at Harvard for some time longer with certain students. According to existing arrangements, the curriculum of a student pursuing a three-years course of study in Philadelphia differs from that of one at Harvard only in the fact that he must retain his information on the subjects studied the first year to the end of the term of study: the result of this is that, notwithstanding the review which he obtains by attendance upon the same lectures in succeeding years, either his memory is overtaxed, or the examinations must be less rigorous than they might be to the student's own advantage. We are confident that if the faculties of our schools were to permit such a voluntary three-years course of study with final examinations at the end of each year, there would be an annually increasing number who would take advantage of it, while those whose circumstances compel them to take the older plan would still be at liberty to pursue it: eventually the three-years course could be adopted for all, with sacrifice to none.

It is barely possible that these pages may be seen by

some among whom, by reason of unfamiliarity with the medical schools and institutions of Philadelphia, an impression prevails that its clinical facilities are inferior to those of other cities. Such an impression is radically erroneous. A glance at the announcements of the two schools and their roster of lectures will convince any one that the so-called college—or dispensary—clinics cover every department of special clinical medicine and surgery. These clinics are abundantly supplied with material of the most varied character, and are intimately associated with the didactic instruction, which is thus at once amply illustrated and rendered attractive by the resulting variety.

A mere glance at the list of general and special hospitals is sufficient to satisfy any one of the variety and extent of facilities in this respect, a most important feature of which is their *easy accessibility* from all points and from one another, as well as from the medical schools; while the long time during which they have been subservient to medical instruction, extending in the case of the Pennsylvania Hospital to more than a hundred years, has permitted the formation of cabinets and museums whose richness in the number and variety of pathological specimens is unequalled elsewhere in this country.

It is a difficult matter to advise medical students. It is perhaps not less difficult for them to follow advice which requires strict adherence to highly systematic methods. So many and varied are the engagements during the winter session of American schools, that it would be impossible for students to follow an unvarying course. It would, therefore, be folly to recommend it. There are, however, a few general matters concerning which suggestions may not be out of place. Much has been said and written with regard to note-taking, some recommending the taking of very full notes, others decrying the system altogether. From large experience in every degree of note-taking, from the merest memoranda to copious short-hand, almost verbatim notes, we believe that neither of the two plans proposed is correct. But there is here, as elsewhere, a golden mean, the attainment of which may be of great assistance. Such a moderate number of memoranda as do not, on the one hand, prevent one's following the words of the lecturer, or, on the other, by their meagreness fail to suggest in subsequent perusal the substance of a lecture, constitute this golden mean. Moreover, experience alone will enable the student to reach it. It may be safely said that, as a rule, the note-taking of the first month's lectures is quite worthless, except by way of giving experience. In this way, however, even *it* is useful. When a power of discriminate note-taking is attained, the most advantageous use of text-books becomes easy. It is clearly impossible to "read up" thoroughly the subjects discussed in lectures; and yet it is plain that, if lectures are to become at all available for instruction to ordinary minds, the latter require to be occasionally refreshed by other means. The note-book is the ready and direct means of accomplishing this, and, so far as it does it unaided, it is sufficient. But the most experienced note-takers constantly find that they have dotted "points" the expansion of which they cannot possibly make. The appropriate text-book is now sought, and a few minutes' reading on the obscure subject clears it up and enables the learner to pass on to another. In this way he is spared the evident loss of time of reading in the books what he already knows, while he escapes also the much more serious consequence of attempting to read everything,—a failure to clear up all points which are really obscure.

A few words in conclusion on the subject of text-books may not be inappropriate in this connection. In *Anatomy*, no more suitable books than Leidy and Gray can be found: the former, concise and clear, is suitable for systematic reading by those who, pursuing a partial course, have time to follow the lectures in their text-books; the latter, with its admirable illustrations, is suitable for reference and the study of regional anatomy during dissection. In *Physiology*, either the seventh English edition by Baker of Kirke's Manual, or Dalton's Human Physiology, is suitable. The latter requires a revision of certain chapters, and the attention given to some subjects is more than sufficient, while in others it is inadequate to the wants of the student. And, although Kirke's Manual contains some errors, the subjects are fairly treated throughout, and for the most part are brought down to the present time. To those who understand German, the text-book of Hermann, of the University of Zürich, is by far the best. For reference, the excellent treatise of Flint, Jr., or the last (seventh) English edition of Carpenter, will be most useful. We warn students against the American reprints of Carpenter and Kirke, as being from old and now almost valueless English editions. In *Chemistry*, the new and excellent work of Attfield, reprinted by Lea of Philadelphia, is by far the most suitable. In *Materia Medica* and *Therapeutics*, Wood or Stillé, with Carson's "Synopsis" at the University, and Biddle's "Review" at the Jefferson College, is available. A good text-book upon this subject in a single volume of about five hundred pages is much needed. In *Practical Medicine*, Flint's or Tanner's "Practice," with Da Costa's "Diagnosis," will answer the wants of students better than the larger works of Aitken and Reynolds. For *Surgery*, the unequalled work of Prof. Gross, notwithstanding its size, recommends itself unqualifiedly. To those who wish a smaller work, that of Erichsen is highly recommended. In *Obstetrics* and the *Diseases of Women and Children*, Cazeaux's Midwifery, Thomas's or Graily Hewitt's Diseases of Women, and Meigs and Pepper on Diseases of Children, will be found most useful.

Abroad, or at least in Germany and Austria, it is the practice with students to subscribe to a medical journal, and the *Wiener Medizinische Presse* or the *Berliner Wochenschrift* is as commonly seen in their hands as is a daily newspaper in the hands of our own students. By such a course they are kept familiar with current medical news and improvements in medical science and appliances from the outset of their career, and on

account of the interests and sympathies thus excited they early become an integral part of the profession they hope subsequently to adorn. The advantage to us of a similar custom, not only in the above respects, but also in correcting an acknowledged deficiency of interest on the part of our profession in medical literature, is apparent.

The General Introductory Lectures are delivered at both schools on October the 9th,—at the University at 12 M. by Prof. F. G. Smith, and at the Jefferson College at 8 P.M. by Prof. B. Howard Rand.

The Dental Colleges and the College of Pharmacy are important parts of the Medical Institutions of Philadelphia. We wish we had space to address some of our remarks more directly to the numerous body of gentlemen constituting their classes; but much that we have already written is equally applicable to them. Preliminary courses are delivered at the Dental Schools during October, and the courses begin at each on the 1st day of November. At the Pennsylvania College of Dental Surgery the general introductory to the course is delivered by Prof. Mears at 5 P.M., and at the Philadelphia Dental College by Prof. Howell at 8 P.M. At the College of Pharmacy the general introductory will be delivered by Prof. Parrish on Monday evening, October 2, at 7½ o'clock.

THE PATHOLOGICAL SOCIETY.

WE shall in our next number resume the publication of the Proceedings of the Pathological Society, which was discontinued in consequence of the adjournment of the Society in June. The first meeting after the summer recess was held on Thursday evening, September 14. The attendance of members was large, and several interesting specimens of morbid anatomy were shown.

The large increase of membership, together with the number of interesting specimens exhibited and reports presented during the past year, furnishes very gratifying evidence of the interest manifested by the physicians of Philadelphia in pathological research. We are glad to be able to announce that the third volume of the Society's Transactions is at present in the hands of the printer and will be ready in a short time for distribution.

LEADING ARTICLES.

MEDICAL EDUCATION ABROAD.

I.

A FEW days only now separate us from the beginning of another Annus Medicus. In every medical school in the land the corps of teachers is reassembling and perfecting its arrangements for the ensuing course, and from all quarters students are crowding to the chief centres of medical instruction. It is with no small satisfaction that we look upon the evident improvement in the system of teaching at the principal schools in America, and we can sincerely congratulate the students of to-day upon the superior advantages and facilities afforded them in the prosecution of their studies.

The history of medical education in America during the past few years has been chiefly marked by the introduction or more marked development of two important elements. We allude, of course, to the more intimate connection between didactic and clinical teaching, and to the large number of courses upon important specialties which have been established. It is evident that both of these improvements have been introduced in great measure in imitation of the system of instruction pursued in medical schools abroad; and, indeed, it is chiefly owing to the more complete development of these advantages that medical education there presents certain features of peculiar excellence. In thus speaking, reference is made principally to the great schools of Germany, Austria, and France. The Universities of Edinburgh and Dublin have, indeed, long deservedly held an illustrious position, and their faculties now, as they have always done, include some of the proudest names in the ranks of British medical science. It is, however, no disparagement of these schools to say that, partly owing to the comparatively small size of the cities, partly to a want of close union and centralization of the various courses of instruction, the facilities offered by them to the student do not compare favorably with those presented at Vienna, Berlin, and Paris. It must undoubtedly strike any casual observer as curious that the imperial city of the world, London, has never been able to boast of a great medical school. The high prizes of wealth, title, and social influence there offered have always attracted to London many of the most brilliant and able medical men in Great Britain, but the mistaken policy they have pursued in medical teaching has always effectually prevented the establishment of a great and truly national medical school. In one single respect, and one only, this system of numerous schools, each connected with a hospital, is of advantage. The number of students at each school being necessarily limited, it is possible to follow more satisfactorily the practice and teaching of any one distinguished man. But, while it allows this, it entails many disadvantages. The number of truly great and successful teachers at one time in any city is never large; and, as the successful applicants for hospital appointments do not obtain their positions by the influence of their ability as teachers, it can scarcely ever happen that any hospital staff should contain more than a small proportion of eminent teachers. And yet the various hospitals in London are separated by such great distances that it is necessary for a student to restrict himself to following the lectures given at some one of them. A further and equally great disadvantage is that, as hospital appointments are chiefly valued on account of the introduction they afford to consulting practice, it is natural that the practical branches of teaching should attract the attention of the most able and experienced members of the staff, while those branches (such as morbid anatomy, chemistry, physi-

ology, etc.) which have little or no tendency to make the teacher known to the public as a practical physician or surgeon are left to the junior members.

When, in addition to this, we take into account the expense involved in maintaining so many small schools, the multiplication of small museums and collections of apparatus, and the impossibility of utilizing to the best advantage the vast amount of clinical material in London, we cannot wonder at the cry which is now being raised there for the establishment of a great central university, where the didactic branches of medical science could be studied under the most eminent teachers, while the hospitals would be reserved solely for the purpose of clinical instruction. It appears inevitable that, until some such modification of the present system is adopted, no great medical school can exist in London.

We turn, then, to the medical schools of Vienna, Berlin, and Paris, as the three which present the highest degree of organization and development, and which afford the most varied facilities to the student. The fundamental advantage which they all possess, and to which they owe their illustrious position, is a strong and continuous governmental support and protection, which not only renders the salary of the teachers secure, but enables them to maintain the standard of education by prohibiting the issue of diplomas by any other body of men. It is impossible to obtain the same results by any other system. A school in America, so richly endowed as to be able to secure the services of the best teachers and to be indifferent to the size of its classes, could undoubtedly maintain as high a standard of education, but the entire want of wise governmental protection would seriously impair its usefulness.

It is interesting to observe how nearly alike are the main features of the three schools above mentioned. In all of them the basis of the system is a school for didactic teaching in intimate association with a hospital for clinical teaching, with the accessories of physiological and pathological laboratories.

In addition, therefore, to the official course, embracing the subjects required in the examination for a degree, the student is enabled to devote himself to the study of experimental physiology, microscopy, pathology, or any special branch of medicine or surgery. The number of years required for the completion of the official course is considerable,—four to six,—and there is consequently ample opportunity for the study of some of these accessory branches. It is precisely here that the great advantage of these schools lies. Provided with every material resource, the laboratories for special research are under the direction of men of the highest ability as original investigators and teachers, who are induced to accept these positions, partly by the salary attached to them (though this is always small), partly by the chance of realizing a handsome income from their numerous pupils, and partly by the opportunity of pursuing special studies and researches and thus acquiring reputation and advancing their favorite branch of medical science; and the pupils studying with them have an opportunity of profiting by the skill of the master, as well as of receiving his aid in the direction of their own investigations. So also the numerous special courses of practical instruction are given in connection either with a hospital or dispensary service by men who have devoted themselves to this particular branch; and, as their classes are usually small, the students have ample opportunities for acquiring thorough practical knowledge of the subject. When we consider in connection with this the fact that the professors lecturing in the official courses are the most eminent teachers in the country, chosen either by a form of competitive examination or by impartial selection, it is evident that the system of medicine as found in these three great cities is truly excellent.

It may seem strange to find the school of Paris classed with those of Berlin and Vienna so soon after the disastrous events of the past year had given such a terrible blow to all French institutions. But whoever has fancied that a series of reverses even so crushing as these have been, or a disorganization of the government even so complete as has resulted in France, could long check the indomitable energy and inexhaustible vitality of its great people, has been strangely mistaken. Within a few weeks after the suppression of the Commune, the École de Médecine opened its doors for a summer course of lectures in place of the course usually given during the spring months. The professors returned to their posts, a considerable class of students collected, and, while yet the sounds of war had scarcely subsided and the signs of havoc and destruction lay thick around the old Quartier Latin, the Medical School of Paris was reorganized and recommenced its beneficent work. It is true, indeed, that many of the brightest names among the Faculty of the French School have recently passed away, and that, for the past decade especially, the lead in medical thought has been assumed by the German School; but it requires only moderate faith to believe that the day is not far distant when the successors of Laennec, Louis, Lisfranc, and a score of others no less illustrious, will, under a more liberal and stable government, reassert their equality in the great field of science.

These three great schools, similar as they are in many of their general features, present many points of difference which render each of them superior to the other two in certain respects.

The first and most decided advantage possessed by Vienna lies in the far greater degree of centralization of all medical teaching there. The splendid Pathological and Physiological Institute—where Rokitansky and Stricker work—is in immediate connection with the great General Hospital, where all of the courses on practical and clinical subjects are delivered. In Berlin and Paris, on the other hand, the hospitals and schools are some distance apart; and no one can fully appreciate the disadvantage of this separation who has not trudged from the Royal University to hear a lecture from Frerichs or Virchow at La Charité in Berlin, or from the École de Médecine to the Hôtel-Dieu in Paris.

It were invidious to continue the comparison between

these three great schools with reference to particulars and to individual teachers. It is easy to observe, for instance, that it will be highly difficult for Vienna, since the death of Oppolzer and the withdrawal of Skoda, and for Paris, since the death of Trousseau, to maintain their reputation in regard to clinical medicine while students at Berlin have the opportunity of hearing both Frerichs and Traube. So, on the other hand, no one will challenge the claim of Hyrtl (at Vienna) to be, facile princeps, the greatest teacher of anatomy in Europe; and it is impossible to find elsewhere such opportunities for the study of obstetrics as are offered in the lying-in wards of the huge General Hospital of that city. So, again, it may be confidently asserted that the world-renowned Hôpital des Enfants at Paris, whence have issued such priceless contributions to our knowledge of the diseases of children, still affords the widest and best field for the study of this important class of affections.

These are, however, only superficial and narrow criticisms, for our design at present has been merely to sketch the salient features of the system of medical education as it now exists in the three great capitals of continental Europe, without attempting to decide the difficult question as to which of these cities offers absolutely the best advantages to students of medicine. There are, however, several points in connection with this subject, of much importance to our students in America, and we propose to advert briefly to these in a second article upon this topic.

REVIEWS AND BOOK NOTICES.

A Treatise on Diseases of the Nervous System. By William A. Hammond, M.D., Professor of Diseases of the Mind and Nervous System and of Clinical Medicine in the Bellevue Hospital Medical College, Physician-in-Chief to the New York State Hospital for Diseases of the Nervous System, etc. With Forty-five Illustrations. 8vo, pp. 754. New York, D. Appleton & Co., 1871.

This volume of Dr. Hammond's supplies a want that has been long felt, and the well-known reputation of the author in the treatment of nervous diseases, as well as the vast experience he has had in this class of cases, especially during the past five or six years, during which he has been residing in New York, makes the work all the more valuable. This is the first work exclusively devoted to diseases of the nervous system which has ever been published in this country; and, in fact, there has been scarcely any treatise in the English language on this subject which covers the same ground.

The author states in the preface that the work has no pretensions to being exhaustive, but that it is mainly practical, and at the same time "sufficiently complete for the instruction and guidance of those who might be disposed to seek information from its pages." It is therefore eminently suited to the mass of practitioners.

The style in which the book is written is elegant and agreeable, and would be more appropriate in a series of semi-popular articles than in a systematic scientific treatise.

It is claimed by the author that to a great extent the work is based upon his own experience and observation. This is certainly a recommendation; but it strikes us that throughout the volume there is rather too great an inclination to bring forward as original discoveries observations made even in trivial matters.

The treatise is arranged in five divisions,—viz.: diseases of the brain, diseases of the spinal cord, cerebro-spinal diseases, diseases of nerve-cells, and diseases of peripheral nerves.

In the introductory chapter there is given a description of the various apparatus and appliances used in the diagnosis and treatment of nervous diseases. Prominent among these we observe the ophthalmoscope, of which frequent mention is made in this volume in regard to the diagnosis of many cerebral affections. This instrument has been one of the most valuable adjuncts in the study of diseases of the brain which have come into use in the past few years. In reference to Kidder's arrangement of Smee's cells for obtaining the constant current which is recommended, we must say, that, as the result of our own experience, although at first the current may be energetic and continuous, still the cells are placed together in so disadvantageous a manner, and the connections between the elements are so imperfect, that in a short time the current becomes weak and uncertain; moreover, it requires much time and trouble to keep the battery in order. Stöhrer's battery, which can be obtained at but little greater expense, is a much more perfect arrangement, and needs but slight attention.

The first division, which embraces cerebral diseases, is admirable, especially the chapters on Embolism, which is included under the head of partial cerebral anæmia, aphasia, and cerebral softening. In fact, all of the subjects in this section are treated with great skill and care. The article on Insanity is of considerable length, and will be of the utmost assistance to the general practitioner, who, as a rule, knows absolutely nothing of the affection, and is nevertheless frequently called upon to make a diagnosis in cases of this nature.

Our author considers multiple cerebral sclerosis capable of existing as an independent disease, and in this view he differs from many other writers on the subject; but the case related by him in which a thorough post-mortem examination was made seems to prove the possibility of the disorder occurring without any spinal sclerosis.

The chapters on antero-lateral spinal sclerosis and posterior spinal sclerosis are complete and of great interest. In the treatment of these affections the use of the constant current and nitrate of silver as well as ergot in the early stages is advised. With these remedies there seems to have been greater success than the majority of physicians meet with in the treatment of these usually obstinate disorders.

Under the head of cerebro-spinal diseases there is introduced an affection which has not previously been noticed, and in illustration of which two cases are given. The malady is entitled "Athetosis," and is characterized by irregular movements of the fingers, which finally become so excessive as to render the hand useless. This recalls a case under our care some time ago, in which there was a somewhat similar condition. The patient was paraplegic, and the fingers underwent spasmodic movements, particularly when the hand was used.

In the section on diseases of nerve-cells we have progressive muscular atrophy, or "atrophy and disappearance of trophic nerve-cells;" and in this connection the writer states his conviction of the existence of trophic nerves, agreeing with Duchenne and Joffrey. Glosso-labio-laryngeal paralysis, organic infantile paralysis, paralysis agitans, writer's spasm, and lead palsy are also included under this head.

Infantile paralysis is scarcely entitled to a place in this section; for, although it is true that but little is known of its pathology, it is highly probable that in the early stages there is spinal congestion, and, later, sclerosis of the antero-lateral columns of the spinal cord.

We regret that the section on diseases of peripheral nerves is not more complete and thorough. For instance, neuralgia, which is a disease of frequent occurrence and of the greatest importance, receives but a few pages, and the treatment of it is given but a superficial consideration. Neuritis and sclerosis of peripheral nerves are not mentioned at all.

The author makes exceedingly positive diagnoses in many maladies which most medical men commonly find it difficult to recognize with certainty. Thus, of cerebral congestion, which may readily be confounded with epilepsy, cerebral anæmia, or an organic disease of the brain, he states that he has seen six hundred and twenty-two cases in private practice.

In the treatment of nervous diseases, Dr. Hammond brings into notice many remedies which are not in general use in

this country, and in the employment of which he reports many favorable results. Among these are the constant current, which he has found useful in the sclerotic conditions of the brain and spinal cord, as well as in most of the forms of paralysis in which it has been used for several years. Ergot he has found of decided benefit in spinal congestion. In the treatment of chorea, he states that he has had unfailing success with strychnia, although he does not use it in the large doses recommended by Trousseau. The ether-spray along the spine he has also used in several cases, in connection with strychnia internally, and a cure has resulted in every case "in two weeks." In the hands of others this remedy has not been so successful. The bromide of lithium, which was first introduced by Dr. S. Weir Mitchell, the author advises in preference to the bromide of potassium in those cases in which it is desirable to obtain a speedy effect. Phosphorus is regarded as being of advantage in many cerebral disorders, and the phosphide of zinc, which Dr. Hammond claims he was the first to use in this country, he considers an elegant preparation.

Notwithstanding the faults which as critic we have been compelled to point out in this work, it is, on the whole, excellent, and does honor to American science. It is not a mere compilation of the writings of others, but it contains much original matter, and shows thorough research.

The book is handsomely gotten up; the print is unusually good, and illustrations are introduced whenever they are necessary for the exemplification of a subject.

THE PHYSICIAN'S PRESCRIPTION-BOOK: Containing Lists of the Terms, Phrases, Contractions, and Abbreviations used in Prescriptions, with Explanatory Notes; the Grammatical Construction of Prescriptions; Rules for the Pronunciation of Pharmaceutical Terms; a Prosodiacal Vocabulary of the Names of Drugs, etc.; and a Series of Abbreviated Prescriptions illustrating the Use of the Preceding Terms: to which is added a Key containing the Prescriptions in an Unabbreviated Form, with a Literal Translation, for the Use of Medical and Pharmaceutical Students. By JOHN PAREIRA, M.D., F.R.S. Fifteenth Edition, 18mo, pp. xvi., 286. Philadelphia, Lindsay & Blakiston, 1871.

A very long notice of this little book is hardly necessary, since the fourteen editions through which it has already passed must have made it very familiar to the medical profession, and since the title-page gives us so thorough an insight into the nature of its contents. In the preparation of the edition which he now presents to the public, Dr. Pareira has subjected the whole of the matter to a careful revision, and has made such alterations and additions as seemed to him to be required for the continual fulfilment of its original object, "which is not merely to represent the prevailing mode of prescribing medicine, according to the instructions of the Pharmacopœia, which continue in authority, but to explain and illustrate the use of terms which are commonly used or may be occasionally met in extemporaneous prescriptions, and a knowledge of which is required alike by medical and pharmaceutical students." This object seems to have been attained, and it gives us pleasure to recommend the work to those members of our profession who do not already possess it. There are few physicians who will not derive occasional benefit from consulting it, but it will, we think, be found to be especially useful to those who have not had the advantage of a classical education.

BOOKS AND PAMPHLETS RECEIVED.

The Functions and Disorders of the Reproductive Organs in Childhood, Youth, Adult Age, and Advanced Life, considered in their Physiological, Social, and Moral Relations. By William Acton, M.R.C.S., etc. Third American from the Fifth London Edition. 8vo, pp. xii., 348. Philadelphia, Lindsay & Blakiston, 1871.

A Practical Treatise on Fractures and Dislocations. By Frank Hastings Hamilton, A.M., M.D., LL.D., Professor of the Practice of Surgery with Operations, in Bellevue Hospital Medical College, etc. Fourth Edition, Revised and Improved. Illustrated with three hundred and twenty-two wood-cuts. 8vo, pp. xxiv., 789. Philadelphia, Henry C. Lea, 1871.

Practical Therapeutics, considered chiefly with Reference to Articles of the Materia Medica. By Edward John Waring, M.D., F.L.S., Member of the Royal College of Physicians, London. Second American from the Third London Edition. 8vo, pp. viii., 765. Philadelphia, Lindsay & Blakiston, 1871.

Medical Office Pupilage. By Dr. John D. Jackson, of Danville, Ky. Pamphlet, pp. 13.

Cancer: Its Classification and Remedies. By J. W. Bright, M.D. 8vo, pp. 188. Philadelphia, S. W. Butler, M.D., 1871.

Announcement of the Annual Course of Instruction in the Philadelphia College of Pharmacy, 1871–1872.

The Physical Diagnosis of Brain-Disease. By Reuben A. Vance, M.D. Pamphlet, pp. 8. New York, William Baldwin & Co.

GLEANINGS FROM OUR EXCHANGES.

SPINA BIFIDA CURED BY AN OPERATION.— Dr. C. v. Brunn reports (*Berlin. Klin. Wochenschrift*, No. 17) a case of spina bifida upon which Prof. Weber, of Halle, operated with success. The child was a rachitic girl 1½ years old, who at the time of her birth presented no unusual appearances, except a rather large head, and a firm but painless tumor, about the size of a hazel-nut, on the back. The tumor soon after increased in size, and fluid was detected in it. When six months old, the child began to grow thin, and it was found not to have undergone the usual development, while, on the other hand, the tumor on the back had increased to the size of a duck's egg. The skin over it was very tense, thin, and in the lower two-thirds purplish in color, so that there was reason to believe that a spontaneous opening would soon occur. The tumor was situated over the first, second, and third dorsal vertebræ, and was attached to the spinal column by a pedicle, having about the thickness of two fingers. It was filled with liquid, and was indolent. At the arch of the second vertebra a diastasis of the laminæ on both sides could be detected, but only at this point. A communication between the interior of the tumor and the sac of the spinal membranes existed only to a very slight extent. The tumor, however, became smaller and relaxed after prolonged and gentle compression. Professor Weber determined to remove the tumor by means of Hutchinson's ovariotomy clamp. Gradual compression of the pedicle was made with this, the contents of the sac being also removed by degrees. On the seventh day the tumor and the clamp fell off together, leaving behind it a healthy granulating surface about three-quarters of an inch in diameter. The canal of communication not being thoroughly closed, the actual cautery was applied to it; but it was some weeks before complete union had taken place. In the mean time there was great improvement in the child's health.

MR. T. SPENCER WELLS' REPORT ON OVARIOTOMY.—The *British Medical Journal*, July 8, 1871, contains the report of proceedings of the Royal Medical and Chirurgical Society, held June 13, 1871, at which Mr. T. Spencer Wells submitted his fourth series of one hundred cases of ovariotomy, in tables of three series.

Series 1.—Cases in which ovariotomy was completed: 100 cases; 78 recoveries, 22 deaths.

Series 2.—Cases in which ovariotomy was commenced, but not completed: 6 cases; 2 relieved or cured, 4 died.

Series 3.—Cases where an exploratory incision was made: 7 cases; 5 recovered from incision, 2 died.

He showed that the mortality after ovariotomy was steadily diminishing: of his first 100 cases, 34 died; of his second 100 cases, 28 died; of his third 100 cases, 23 died; of his fourth 100 cases, 22 died. In this fourth series, 44 had been in hospital and 56 in private practice. In private practice the mortality was only 14 per cent., while in hospital it was 31 per cent. The author believed that the mortality in pri-

vate practice might be taken as a guide to what might become the general average mortality after ovariotomy, and he was convinced that it might be reduced to about ten per cent. without excluding those extreme cases where the operation is performed as a forlorn hope. The author then proved that large tumors of the non-gravid uterus had been frequently mistaken for ovarian tumors, and he pointed out how they might be distinguished from each other. He showed that there is nothing in the history of a doubtful case which affords any decisive assistance, and then examined in detail the signs afforded by inspection and measurement of the abdomen, by palpation, and by percussion and auscultation, which are of value in diagnosis. He then described the conditions to be observed in examination by the vagina and rectum,—alone or combined, and in conjunction with examination by the abdominal wall,—deferring to a future opportunity any account of the results obtained by exploratory punctual incision.

Reflex Epilepsy from Disease of the Ear.—Dr. Schwartze communicates to the *Centralblatt*, May 20, 1871, the case of a young man in whom epilepsy seemed to be caused by disease of the middle ear. The countenance was expressive of suffering, there was slight paralysis of the left facial nerve, and the skin covering the mastoid process of the left side was red and swollen, and, when pressure was made upon it, it was found to be very sensitive. Dr. S. thought it right under these circumstances to perforate the mastoid process, in the hope that with the evacuation of the thickened pus that was retained in the middle ear the epileptic paroxysms would cease. After the operation there were no more severe seizures, and the patient's general health was very much improved, there having been no attack, at the time of reporting the case, for several months.

Suppuration of Half of one of the Hemispheres of the Brain—No Loss of Consciousness and no Paralysis—Sudden Death.—We find the following remarkable case reported by Dr. A. Schwarzenthal in the *Wiener Medizinische Presse* for August 20: A woman, æt. 30, a day-laborer, who had previously been under treatment for syphilis and leucorrhœa, was admitted last May to the hospital in Zolkiew, suffering with headache, which was at that time of several weeks' duration, with prostration and with diminution of appetite. Febrile exacerbations occurred sometimes in the morning and sometimes in the afternoon, and it was consequently thought that she had intermittent fever. In time her condition had so much improved that she was discharged. She returned to her occupation, doing as hard work as before her illness, and occasionally frequenting houses of ill repute, at one of which she died suddenly a month after her discharge from the hospital. As there was a suspicion that violence had been used towards her, an inquest was held, the result of which was to show that there was no reason to believe that she had been ill used. The posterior half of the right hemisphere of the brain was found converted into a large abscess, while the left hemisphere was doughy to the feel, and the cerebellum was softened. From the history of the patient, Dr. S. thought that the abscess of the brain must have existed for three months, notwithstanding that during all that time there had been no loss of consciousness, and that during part of it she had been able to do hard work.

A Pregnant Woman wounded in the Abdomen—Recovery.—The following is an abstract of the report of a very interesting case which will be found in the *Wiener Medizinische Presse* for August 20:

A woman eight months gone with child was accidentally shot on the 14th of November, 1870. The gun was loaded only with a wadding of flax, which was rammed down very tightly upon the charge, and made a wound, about half an inch in diameter, an inch below the last rib of the left side, and five inches from the vertebræ. The edges of the wound were lacerated and the skin in its neighborhood discolored and swollen. An examination showed that the intestine was protruding through the wound, but it was very readily restored to its proper position. On the night of the 15th of November she bore a living child, which died, however, in a very short time. A few days after, the wadding was removed from the wound, and it was then discovered that the intestine had been injured. The woman left her bed on the fourteenth day after the occurrence of the accident. On the 25th of January, 1871, Dr. Reiss, who reports the case, heard that she was doing well, the wound in the side having diminished to the size of a pea, and most of the fæces being passed by the anus. In March, 1871, Dr. R. saw her, and found the wound in her side completely closed. The evacuations were passed by the anus without pain, and she presented as healthy an appearance as before the accident.

Sir Thomas Watson on the Pathology and Treatment of Cholera.—In a recent reprint in the *Brit. Med. Jour.*, August 5, 1871, from advance sheets of the new edition of Sir Thomas Watson's Lectures, now passing through the press, this eminent authority accepts the theory of Dr. George Johnson, that the phenomena of cholera result from the entrance of a peculiar poison into the blood, where it probably undergoes, like that of smallpox, a rapid process of self-multiplication, and spoils certain of the blood-constituents which are ejected through the mucous membrane of the alimentary canal; that the feelings of general oppression and *malaise* sometimes experienced before the onset of the bowel-symptoms are indicative of blood-poisoning; that the copious discharges are expressive of the efforts of nature to throw off a noxious material, and really form, therefore, a necessary part of the process of recovery; and that, if the pouring forth of the vascular excretion be checked (as it can perhaps by opium), the risk of fatal collapse is thereby increased.

The treatment recommended, therefore, is the "evacuant plan," consisting in the use of castor-oil, rhubarb, magnesia, and a similar class of remedies, which carry off the offending matter.

Treatment of Pruritus Vulvæ due to Vaginitis.—Dr. Lorrile Athill, in a clinical lecture (*Dublin Med. Press*, June 21, 1871), primarily states that pruritus rarely occurs except as a symptom of inflammation of the mucous membrane of the uterus or vagina, and can only be relieved by curing these affections. If vaginitis alone exist, with a view of attaining this object and checking the pruritus which it causes, use in the first instance soothing applications, then astringent ones. Of the former, none can compare with infusion of tobacco. It should be made by infusing two drachms of the unmanufactured leaf in a pint of boiling water. He has never seen the least unpleasant effect follow its use, while the relief afforded is most marked.

Another mode of treatment of the greatest value, according to this gentleman, is glycerine. A roll of cotton-wool, with a strong thread attached to facilitate removal, and saturated with glycerine, should be passed into the vagina through a speculum, and allowed to remain there for twenty-four hours; this produces a copious watery discharge, which is often followed by very satisfactory results.

Syringing the vagina with a solution of borax in tepid water or infusion of tobacco is in such cases of great use. It should be used in the strength of three drachms to the pint, and injected by means of one of the continuous siphon syringes. To allay the intolerable itching, Dr. Athill has also been in the habit of recommending the patient, after she has sponged herself with warm water, to lay inside the labia a piece of lint soaked in a lotion composed of carbolic acid, ten grains, acetate of morphia, eight grains, dilute hydrocyanic acid, two drachms, glycerine, four drachms, and water, two to four ounces.

Chapman's Entire Wheat Flour.—Prof. A. H. Church, M.A., of the Royal Agricultural College, Chichester, remarks (*Chem. News*, Sept. 1, 1871) that it is well known that fine flour contains less nitrogen than the whole wheat-grain, and that in endeavoring to supplement this deficiency of nitrogenous compounds by the addition of bran, while the chemical conditions of a satisfactory food rich in flesh-formers may be fulfilled, the mechanical texture of the mixture leaves much to be desired. Chapman's entire wheat flour gave in his hands very encouraging results. Two determinations of nitrogen gave, respectively, 2.12 p. c. of nitrogen.
2.11 " "
The mean of these results, when multiplied by the proper factor 6.33, gives 13.39 p. c. of albuminoids as contained in

this preparation. This is a very large amount, and one seldom reached except in grain of exceptional qualities. The ash determination was also favorable. The whole grain of wheat yields generally about 1.6 p. c. of ash. Chapman's flour gave 1.04,—which compares favorably with the low percentage of 0.6 found in ordinary fine flour. This ash was unusually rich in the most important ingredient of the mineral matter of wheat-grain, containing as it did 51.8 p. c. of anhydrous phosphoric acid. The ash of ordinary whole wheat gives as an average no more than 46.2 p. c. of this ingredient.

THE MAGNETIC CONDITION OF MINERAL WELLS.—To the Detroit *Review of Medicine and Pharmacy*, July, 1871, Prof. R. C. Kedzie has contributed an admirable paper on the magnetic condition of mineral wells.

In direct opposition to the opinion generally and justly held by scientific men, it has been frequently announced that in various parts of the country water-sources existed, the water from which had the power of inducing a magnetic condition in pieces of iron held in it for a short time. The source of error is to be found in the fact that whenever bars or tubes of iron are sunk vertically in the ground they become magnetic, —consequently, of course, capable of inducing a similar condition in other suitable bodies,—and that the test for the magnetic qualities of the water has nearly always been made in the immediate neighborhood of the tubing supplying the water.

In those cases where magnetic properties have been induced in metal immersed in the stream running at a distance from the magnetic tube, the explanation is that any substance capable of being magnetized will become magnetic if held perpendicularly for a sufficient length of time.

The more nearly is the iron rod in the line of magnetic dip at the point of observation, the more rapid and powerful will be the magnetic induction; and, as the dip becomes more and more nearly vertical as we move northward, it is natural that this magnetic condition should have been most noticed in the more northern States.

Professor Kedzie takes pains to prove his statements, and answers unhesitatingly in the negative the questions "Do magnetic properties exist in these waters?" and "Do any healing powers which they may possess arise from this magnetic condition?"

He is, of course, perfectly right.

[We may be permitted to observe that the author of "The Coming Race" would be the better for a perusal of the Professor's paper; for he mentions a bath, taken in the land of his friend Aph Linn, which had properties resembling those to which he attributes the success arising from the use of certain magnetic waters on this upper earth. Whether water will ever contain "Vril," we know not; that it cannot contain magnetism, we know.—EDS.]

QUINIA AND THE ERUPTION OF VARIOLA.—Dr. R. B. Bontecou writes to the *Medical Record*, of September 15, that in a case of variola in which quinia was given in two-grain doses three times daily, the eruption, which was so profuse as to threaten to become confluent, had almost wholly dried up, without pustulation, at the end of seven days. Tincture of iodine was applied to the face to prevent pitting; but this, he thinks, could have exerted no influence on the course of the eruption on other parts of the body.

MISCELLANY.

NAVAL MEDICAL SERVICE.—A disposition to supersede Dr. Wm. M. Wood in the office of Chief of the Bureau of Medicine and Surgery in the Navy Department has been recently manifested. Its origin is ascribed to certain persons of the naval line, who seek this mode of resenting that gentleman's efforts in favor of the law, passed at the close of last session of Congress, which gives a relative rank to medical officers and classes them in new grades. This faction has made an alliance with the Secretary of the Navy, and indicates to him the removal on the ground that it was proposed in June, 1869, as a rule that chiefs of bureau should be superseded on reaching the age when officers of the Navy are withdrawn from active duty at sea, and are left, under the laws, eligible for shore-service only, except in certain cases; that only such officers as are legally qualified for sea-service should be appointed bureau chiefs, and that the senior on the active list of each staff corps should be preferred to the post made vacant by this arbitrary rule. It was promised that the effect of its observance would be to make every staff officer in turn, as he reached the head of the active list, chief of bureau. Neither the impracticability of the theory nor the impolicy of frequently changing heads of departments was considered. Nor was objection discovered in the laws. One of them declares that these chiefs of bureau are "to hold their said offices for the term of four years;" and the Tenure of Office act provides that they are not to be removed without the concurrence of the Senate. As the law confides their appointment to the President and Senate of the United States, it was a bald assumption that the Secretary has authority to dismiss them at pleasure, in order to establish a rule which law contravenes.

It is not alleged that Dr. Wood is in any manner or degree inefficient. On the contrary, a majority of the medical corps has expressed cordially its satisfaction with his official conduct, and a desire that he may continue in office until the expiration of his legal term,—that is, till July 1, 1873,—when he will have attained the age of very little more than sixty-four years. What reason can justify the removal of an efficient and popular officer on the sole ground that he is sixty-two?

The Secretary of the Navy is a warm advocate of the observance of law, justice, and the will of the majority. If he has time to weigh carefully all the circumstances of the case, it is hardly probable that he will assist a faction in the accomplishment of its purpose on merely personal grounds.

There is no doubt that the medical profession will regret to learn that any member of it in the Government service has been unfairly or uncourteously treated, and will regard with interest the decision of this case.

AN ODD CAUSE OF DEAFNESS.—A patient applied the other day to Dr. Harlan, of this city, complaining of deafness in the right ear. A loudly-ticking watch could be heard only at two inches. Examination revealed a black mass firmly impacted in the meatus. It was removed after a good deal of difficulty and perseverance, when the watch could be easily heard at the other end of the room. The man was a "minstrel," and the cause of his deafness was a gradual accumulation in the meatus of burnt cork, with which he had been blacking his face every evening for some eight or ten years.

HONORS AND APPOINTMENTS.—Dr. Habershon has been chosen Lettsomian Lecturer in the Medical Society of London, in place of Dr. Hyde Salter, who has resigned the appointment.

M. Lacage-Duthiers has been elected by the Academy of Sciences, Paris, to the seat left vacant by the death of Longet.

Prof. Henry S. Cheever, of the University of Michigan, has been elected to the Chair of Physiology and Microscopic Anatomy in the Long Island College Hospital of Brooklyn, New York.

Dr. W. W. Dawson has been elected to the professorship of Surgery in the Ohio Medical College, left vacant by the death of Prof. Blackman, and has accepted the appointment.

INCREASE OF INSANITY IN ENGLAND.—The report of the English Commissioners of Lunacy for the year 1870–71 shows that the proportion of insane persons to the general population of Great Britain has been steadily increasing within the last twenty years. In 1851 the ratio was 1.86 per thousand, and in 1871 it is 2.49. A part of this increase of cases of insanity is due to the vigilance with which the law against the private treatment of the insane is enforced, notwithstanding which, however, the Commissioners express the opinion that there are still large numbers of insane persons in England kept under private care and deprived of the benefits of periodical inspection. There still exists, it is stated, an insufficiency of accommodation for the insane of all classes, but especially of paupers.

THE NEW STYLE OF CHEMICAL NOTATION.—*The Physician and Pharmacist* for August, 1871, contains a notice of the recently-issued work on chemistry by John Attfield, Ph.D., F.C.S., etc., published by Henry C. Lea, of this city, from which we extract the following remarks on the new style of chemical notation: "It is to be regretted that the author uses exclusively the so-called new style of chemical notation, which is liable to so many objections. While some chemists adopt it, the majority object to it, saying it is only a change without an improvement,—that it tends to create confusion without adequate advantages, and that, being founded on ingenious theories without solid facts to support them, it is liable to be superseded at any time by some other more ingenious theories, making confusion worse confounded. For instance, chemists generally call sulphuric acid SO_3HO, while the advocates of the new style pretend it should be called H_2SO_4. To this pretension it is answered, we know SO_3 free and HO free, we can unite them in direct combination, forming SO_3HO, and in the inverse manner from SO_3HO we can obtain SO_3 and HO separately: for these reasons we call sulphuric acid SO_3HO. When you show us SO_4,—a combination that no man has seen yet,—and when you turn it into sulphuric acid by the addition of H_2, then we are ready to entertain your proposition. Till that time, we shall keep the usual notation, well understood by all, for fear somebody might propose to call sulphuric acid $O+OH_2SO+O$ or OH_2O+OSO, because it looks nicer on paper or answers better for some pet theory."

PROF. SAYRE.—It is pleasant to observe the courtesy with which Prof. Lewis A. Sayre, of the Bellevue Hospital Medical College, is received in London. Among other compliments tendered him, he was invited by the Governors of the Children's Hospital, Great Ormond Street, to deliver a lecture on The Treatment of Hip-Joint Disease. This lecture is reported in full in the *British Medical Journal* for July 22, 1871, and abounds in the practical suggestions as to treatment for which Prof. Sayre is so justly eminent.

PRELIMINARY STUDY OF CHEMISTRY.—At the recent meeting of the General Medical Council of Great Britain, the following motion was put and *lost*:

"That it is desirable that students should have the option of acquiring an adequate knowledge of chemistry, and of passing an examination in it, before they enter upon the period recognized by the licensing bodies as the course of professional study."

The object of the motion, made by Dr. Storror, was a good one. The mover said that it was in the interest of the student and patient. It was agreed that four years' study was the utmost limit that could be prescribed for professional study, and yet that period was still overcrowded with subjects. The proposition would reduce the pressure on the student by making an examination in chemistry precedent to the course of professional study, *optional* with the student. Since the motion of Dr. Storror left the examination optional and not compulsory, we see no good reason why it should not have met the entire approval of the Council; and it certainly would have had the advantage claimed for it, of relieving, from the over-pressure to which they are subjected, those who might wish to take advantage of it.

CURIOSITIES OF LIFE.—The following, which we take from one of the daily papers, will, we think, be found interesting by many of our readers:

Half of all who live die before seventeen.

Only one person in ten thousand lives to be one hundred years old, and but one in a hundred reaches sixty.

The married live longer than the single.

There is one soldier to every eight persons, and out of every thousand born only ninety-five weddings take place.

If you take a thousand persons who have reached seventy years, there are of

Clergymen, orators, and public speakers	43
Farmers	40
Workmen	33
Soldiers	32
Lawyers	29
Professors	27
Doctors	24

These statements are very instructive. Farmers and workmen do not arrive at good old age as often as clergymen and others who perform no manual labor; but this is owing to the neglect of the laws of health, inattention to proper habits of life in eating, drinking, sleeping, dress, and the proper care of themselves after the work of the day is done. These farmers or workmen eat a heavy supper on a summer's day and sit around the doors in their shirt-sleeves, and, in their tired condition and weakened circulation, are easily chilled, laying the foundation for diarrhœa, bilious colic, pneumonia, or consumption.

CHOLERA.—The epidemic of cholera at present existing in portions of Europe seems to have taken its origin in Russia, where cases of the disease, it is said, have been frequent during the past two years. In July of this year it appeared in Wilna, and subsequently in other parts of Poland, and then passed into Germany. Königsberg in Prussia has suffered very severely, the number of cases not only being large, but the percentage of mortality also being great; and this, we learn from the daily papers, continues up to the time of writing. Cases have occurred in Berlin, but the disease has not yet been epidemic there. Vienna, thus far, seems to have escaped a visitation from it, and but few cases have been reported in Paris; there is, however, evidence, in the large increase in the number of deaths from diarrhœa which have recently occurred, of the presence in the latter city of an epidemic influence tending to the production of cholera. Cases have been reported to have occurred in various of the seaports of Great Britain, but up to this time the efforts made to prevent the spread of the disease have been successful. The disease has also appeared at Constantinople.

The season is so far advanced that it is most likely that the disease, if it occurs at all in this country, will not assume an

epidemic form. A feeling of security is, however, frequently a source of danger; and we hope, therefore, that the Health Officers, not only in this city but at all other commercial ports, will adopt preventive measures against the introduction of the disease into this country. A correspondent of the London *Times* recommends the sprinkling of the streets with carbolic acid as an excellent means to prevent the extension of cholera.

A Heathen Opinion as to the Fate of Doctors.—Lieutenant Masters, of the British Navy, who has been traversing Terra del Fuego, edifies his government with comments on the people, whom he represents as believers in devils, —who are departed spirits of doctors only. The chief business of life appears to be to keep these ghosts from doing mischief.

Another Fasting Woman.—Some of the English journals contain an account of another case of a fasting woman, even more remarkable than that of the celebrated Welsh girl. She is thirty-three years old, became rather suddenly sick about three years ago, is now completely bedridden, and has not eaten anything for nearly two years. Several doctors have attended her during that time, but, as none of them have been able to give her substantial relief, her aunt, with whom she lives, has at length wisely determined that it is useless to continue to incur expense for medicines without any hope of cure. She gets very little sleep, and cannot bear a lighted candle in the room at night-time. The London *Lancet* of September 2, in commenting on this case, says, "It is to be regretted that the contributors to some of the papers are not compelled to take out a course of lectures on physiology. For their benefit we give the following facts. The whole affair is simply a matter of calculation. A healthy person at rest breathes about 480,000 cubic inches of air per diem, which in round numbers will give about 20,000 cubic inches for the amount of carbonic acid expired, or nearly 10,000 grains by weight, which contains eight ounces of solid carbon. This weight of carbon must be supplied per diem to a healthy person to maintain the ordinary weight. A debilitated woman lying in bed might exhale somewhat less,—say five ounces, or even four ounces. In this case, supposing that she consumes no food at all, she would lose a pound in four days, or a stone in fifty-six days; but our patient has managed to live nearly, if not quite, five hundred days: consequently she must have lost at least five stone of carbon alone in that time. But death ensues by inanition when the body has lost about forty per cent.; so that even were her original weight twelve stone she could scarcely be alive now. But no account has here been taken of the nitrogen, of the hydrogen, or of the salts, leaving the body by the natural channels of the skin, kidneys, and bowels, and over the discharge of which the woman can exert no control, and which would collectively considerably exceed the carbon in weight."

The alleged intolerance of a lighted candle in the night is certainly a peculiar and a somewhat suggestive feature of her case.

Prize Essay on "Diseases of Children."—The President of the Medical Society of the County of New York, Dr. Abraham Jacobi, has placed in the hands of its Treasurer four hundred dollars ($400), to be awarded for the best essay on "A History of the Diseases of Infancy and Childhood in the United States, and of their Pathology and Therapeutics."

Competitors will send their essays in English, with motto attached, and the name and address of the writer, with the same motto, in a sealed envelope, to the present Secretary of the Society, Dr. Alfred E. M. Purdy, 123 East Thirty-Eighth Street, New York, on or before January 1, 1873.

The Committee are authorized by the Society to withhold the prize if the essays submitted should not merit it.

Committee—Austin Flint, M.D., Ernst Krackowizer, M.D., and Edward S. Dunster, M.D.

This prize is open for universal competition.

New Test for Blood-Stains.—J. W. Gunning (*Journal of Applied Chemistry*) has discovered that acetate of zinc will precipitate the coloring matter of blood from solutions. The flocculent precipitate must be washed by decantation, and left to evaporate and dry on a watch-glass, and, if blood has been present, the microscope will reveal delicate hæmin crystals.

A Remedy for a Poor Memory.—The *British Medical Journal* for July 1, 1871, says that a person named G. M. Raufer puffs and sells, under the name of "Lemonade for Strengthening the Memory," a fluid mixture of about thirty grammes, containing fifteen parts of phosphoric acid, fifteen of glycerine, and seventy of water. This is sold in Vienna.

Mortality of Philadelphia.—The following reports are condensed from the records at the Health Office:

	For the week ending Sept. 16.	Sept. 23.
Consumption	32	48
Other Diseases of Respiratory Organs	31	15
Diseases of Organs of Circulation	10	12
Diseases of Brain and Nervous System	39	35
Diseases of the Digestive Organs	43	26
Diseases of the Genito-Urinary Organs	4	7
Zymotic Diseases	21	21
Debility	35	20
Cancer	7	7
Casualties	16	15
Murder	0	1
Suicide	1	2
Old Age	9	13
Stillborn	10	17
Tetanus	0	2
Scrofula	2	0
Unclassifiable	9	12
Unknown	1	5
Totals	270	258
Adults	131	152
Minors	139	106

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS OF THE MEDICAL DEPARTMENT U. S. ARMY, FROM SEPTEMBER 5, 1871, TO SEPTEMBER 18, 1871, INCLUSIVE.

Peters, De Witt C., Surgeon.—By S. O. 347, War Department, A. G. O., September 5, 1871, relieved from duty in Department of the Missouri, to proceed to New York City, and, upon arrival, report by letter to the Surgeon-General.

Winne, Chas. K., Surgeon.—By S. O. 204, Department of Dakota, September 7, 1871, assigned to duty at Fort Shaw, M. T.

McElderry, H., Assistant-Surgeon.—By S. O. 346, Headquarters of the Army, A. G. O., September 4, 1871, granted leave of absence for four months.

Cronkhite, H. M., Assistant-Surgeon.—By S. O. 359, War Department, A. G. O., September 14, 1871, granted leave of absence for three months.

Girard, A. C., Assistant-Surgeon.—By S. O. 177, Department of Texas, August 29, 1871, assigned to duty at Fort Brown, Texas

Steinmetz, Wm. R., Assistant-Surgeon.—By S. O. 177, c. s., Department of Texas, assigned to duty at Fort Duncan, Texas.

Harvey, P. F., Assistant-Surgeon.—By S. O. 177, c. s., Department of Texas, assigned to duty at Ringgold Barracks, Texas.